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RESEARCH, DEVELOPMENT, TEST AND
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Conclusions are that the RDTE activities and their customers have opinions that rate stabilization entails more disadvantages than advantages. Rate stabilization is not meeting the objective for which it was implemented since a minority of the RDTE customers use the rates in budgeting.

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Rate Stabilization at Navy Industrial Fund
Research, Development, Test and Evaluation Activities

by

Donald Truman Green
B.S., Abilene Christian University, 1966

Submitted in partial fulfillment of the
requirements for the degree of

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ABSTRACT

The 13 Navy industrially funded RDT&E activities implemented rate stabilization in October 1976 under protest. With rate stabilization, DOD industrially funded activities bill their customers on the basis of stabilized billing rates that cannot be adjusted during the fiscal year as costs change. A basic objective is to allow customers to plan for cost escalation during a fiscal year by using rates established up to 15 months in advance of the fiscal year start.

This thesis examines the operating results of rate stabilization at NIF RDT&E activities 18 months after implementation, in order to determine the degree of success in meeting rate stabilization objectives. Questionnaires and Financial Statements were used to gain research data.

Conclusions are that the RDT&E activities and their customers have opinions that rate stabilization entails more disadvantages than advantages. Rate stabilization is not meeting the objective for which it was implemented since a minority of the RDT&E customers use rates in budgeting.

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I. RESEARCH OBJECTIVE

A. INTRODUCTION

In February 1975, the Assistant Secretary of Defense (Comptroller) required some Navy Industrial Fund (NIF) activities to implement rate stabilization and "anticipated" that the others "will participate fully in the rate stabilization program." [Ref. 1]. The NIF Research, Development, Test and Evaluation (RDT&E) activities resisted such participation for almost two years. They finally implemented the program on 1 October 1976 under protest, feeling that stabilized rates are not appropriate for planning and billing RDT&E efforts.

Rate stabilization means that each NIF activity will formulate fixed billing rates during the budget formulation period approximately 15 months in advance of the fiscal year start. Customers of the NIF activities can use these rates in their own budget formulation. The same rates will then be used to bill the customers for services they receive from the NIF activity during the operating fiscal year. The rates are fixed for the entire operating fiscal year. [Ref. 2].

An earlier thesis, authored by LCDR Joel Kramer, USN, and Ernest Solberg in December 1976 [Ref. 3], discussed the perceptions of the NIF RDT&E activities in late 1976. That thesis contains several conclusions based on research of literature on rate stabilization and on interviews with

several NIF RDT&E activity managers as well as with other managers.

The earlier thesis presented perceptions of the managers before they had had actual operating experience with stabilized rates. These perceptions are discussed in Chapter II. The current thesis surveys perceptions after over a year of experience. It also expands the scope of the survey to include the perceptions of the customers of the NIF RDT&E activities. Since the customers are considered to be the primary beneficiaries of rate stabilization, their assessment of rate stabilization is considered to be highly significant.

B. RESEARCH APPROACH

The basic approach to determining what effects rate stabilization has had on NIF RDT&E activities and their customers consisted of the following four steps.

1. Determination of NIF RDT&E Activity Financial Managers' Opinions of Rate Stabilization

As reported by Kramer/Solberg, the NIF RDT&E activity managers objected to implementation of rate stabilization at their activities when first proposed in 1975. Questionnaires and analysis of recent correspondence are used to determine whether the managers have changed their opinions after over a year of experience with stabilized rates. Three questionnaires were sent to activity managers, one for the Commander and Technical Director, one for the Comptroller, and a third

for cost center managers and project managers. Some questions were common to all three questionnaires and the differences in responses are analyzed. Other questions are unique to each questionnaire respondent and are analyzed in terms of the specific problems faced by that respondent. Results of the analysis are in Chapter IV.

2. Determination of Customers' Opinions

A fourth questionnaire was sent to Program Managers in three systems commands, the Naval Air Systems Command, the Naval Sea Systems Command, and the Naval Electronics Systems Command. These program managers are the primary customers of the thirteen NIF RDT&E activities. The questionnaire was designed to obtain the customers' opinions on the usefulness of stabilized rates in their budget formulation and in communications with NIF RDT&E activities. Results of the analysis are in Chapter IV.

3. Determination of Navy Comptroller, Office of Naval Research, and Naval Material Command Opinions

Personnel in these offices have produced several point papers and drafted the official directives concerning implementation of rate stabilization by the NIF RDT&E activities. These reports and directives were reviewed and the personnel interviewed to determine their current opinions on rate stabilization at NIF RDT&E activities.

4. Determination of Financial Impact

Statements of Revenues and Costs for the thirteen NIF RDT&E activities included in the thesis survey were reviewed and summarized. The total variance between actual costs incurred by the activities and the amounts billed to their customers, that is, "profits and losses," were analyzed by type of variance. Types included stabilized rate variances, overhead over- and under-application, direct adjustments for correction of errors, and fixed-price agreement variances. Results of the analysis are in Chapter IV.

In addition to the above four steps, and partially to determine the financial impact of stabilized rates, variance reports were analyzed to compare the two basic systems used by NIF RDT&E activities to calculate and bill stabilized rates. One method is to calculate one manhour or manday rate for each cost center at the activity. The other is to establish multiple manhour or manday rates for each cost center. Each of the multiple rates is established for a pay level or range of pay levels; for example, a rate for GS grades 1 through 5, another for GS 6 through 9, and so forth. The results of the analysis are in Chapter IV.

C. THESIS OUTLINE

Background information on the Navy Industrial Fund, the 13 NIF RDT&E activities, rate stabilization concepts, and the early perceptions of rate stabilization is presented in

Chapter II. Descriptions of the research methodology are in Chapter III. Chapter IV contains the research findings and analysis, presented in the following sequence:

1. NIF RDT&E activity financial managers' opinions,
2. customers' opinions,
3. Navy headquarters financial managers' opinions,
4. financial impact of rate stabilization, and
5. analysis of the two methods of establishing stabilized rates.

Chapter V contains a summary of the advantages and disadvantages of rate stabilization and of the tradeoffs involved. Overall conclusions based on the research are in Chapter VI. A list of the 13 NIF RDT&E activities, financial information on these activities, and copies of the questionnaires with tabulations of responses are in Appendices A through F.

II. BACKGROUND INFORMATION

A. NAVY INDUSTRIAL FUND

The Navy Industrial Fund (NIF) was established under the provisions of Title 10, U.S. Code, Section 2208, which authorized the Secretary of Defense to establish working capital funds and to prescribe regulations governing operations of the funds [Ref. 5]. The regulations which govern the operations and accounting procedures of the industrial fund activities are in DOD Directive 7410.4 [Ref. 5], Volume III of the Navy Comptroller (NAVCOMPT) Manuals [Ref. 6], and accounting handbooks for specific types of NIF activities [Ref. 7 for RDT&E activities].

Only those characteristics of NIF which will aid in understanding rate stabilization and its impact will be discussed here. Additional background material is available in References 5 through 8.

NIF was designed to place commercial-type activities on a business basis similar to private sector businesses. Industrial funds were established to provide information on the cost of work performed. The industrial fund concept, with business-like statements of operations and detailed job order cost accounting, is intended to foster efficiency. With the data provided, managers have the tools by which to evaluate operating policies, procedures, and productivity.

Another efficiency motivator is the buyer-seller relationship inherent in the industrial fund concept.

The buyer-seller or contractual relationship between the NIF activity and its customers is a basic criterion for designating an activity as a NIF activity. Customers, in the case of NIF RDT&E activities, are Program Managers in the various Navy systems commands, other military departments, other Federal agencies, foreign governments, and private industry. Customers initiate work at a NIF activity by issuing a Work Request, a Project Order, or other appropriate ordering document. These documents form "contractual relationships" between the customers and NIF activities. They authorize performance of work and incurring of costs in behalf of the customers.

The operating costs of each NIF activity is paid initially from the working capital of the NIF activity which finances the costs of a cycle of operations. The NIF activity then bills the customer to obtain reimbursement. When the billing is paid by the customer, the NIF activity receives reimbursement from the customer's funds which replenishes its working capital.

The objective of each NIF activity is to obtain full reimbursement of costs but not make a "profit" or a "loss". Also the objective of the entire Navy Industrial Fund is to break even. Although strictly speaking there is no profit motive, any "profits" or "losses" sustained serve to temporarily increase or decrease the capital of the NIF fund. To achieve

breakeven in the long-run, overhead rates, and now stabilized billing rates, are adjusted in future fiscal years to compensate for profits or losses [Ref. 8, p. I-1].

Rate stabilization changes the billings to customers. Prior to rate stabilization, actual direct costs plus overhead costs applied to direct projects were billed to customers. Overhead rates could be adjusted during the fiscal year to arrive at a zero profit/loss position. Under rate stabilization, a rate per direct manhour that was calculated during budget formulation, eighteen months prior to the start of the fiscal year, is multiplied by actual direct manhours worked for the customer to determine the billing amount. These rates cannot be changed without OSD approval.

B. NIF RDT&E ACTIVITIES

Thirteen activities are designated as NIF Research, Development, Test and Evaluation (RDT&E) activities. Seven are under the direction of the Chief of Naval Material (Director of Laboratory Programs). Four are Naval Air Systems Command activities. The Naval Research Laboratory reports directly to the Office of Naval Research, and the Naval Civil Engineering Laboratory is under the Naval Facilities Engineering Command. A listing of the activities is in Appendix A. Total staffing reported by the thirteen activities as of the end of Fiscal Year 1977 was 32,986 civilian employees and 4,098 military personnel. Staffing for individual activities is shown in Appendix B.

The overall mission of the Navy RDT&E activities is to maintain an adequate base of technology to be responsive to mission needs. These activities participate in the acquisition of weapon systems, becoming involved in such activities as:

1. research to advance the state of the art,
2. exploratory system and subsystem development,
3. tests and evaluations of systems under development, and
4. demonstration of and application of new technologies in solutions to meet mission needs.

The activities monitor and support contractors' exploration of alternative systems by:

1. preparing mission oriented technical documentation,
2. evaluating alternative system design concepts,
3. evaluating innovative use of advanced technology,
4. assessing technical risk during development stages,
5. evaluating the technical progress of contractors throughout system acquisition process, and
6. independent testing and evaluation of alternative candidate systems [Ref. 9, pp. 31-32].

The various NIF RDT&E activities have differing areas of expertise. For example, the Naval Underwater Systems Center, Newport, Rhode Island, is the RDT&E center for underwater combat systems. The Naval Weapons Center, China Lake, California, is the RDT&E center for air warfare and missile weapons systems. Other activities are concerned with command control telecommunications, undersea surveillance and

deep ocean technology, and naval aircraft systems. These are only some of the specific missions of the NIF RDT&E activities [Ref. 3, pp. 77-78].

The financial information for the activities provides additional background relevant to a study of rate stabilization. Total revenue (amount billed to customers) for the thirteen activities for Fiscal Year 1977 was approximately \$1.717 billion. Total costs incurred were about \$1.704 billion. The difference, about \$12.793 million, represents a "profit." As a percentage of total revenue, it is rather insignificant at less than one percent. Of this profit, \$2.987 million was a result of stabilized rate variance. Therefore, stabilized rate variances represent less than 25 percent of the total "profit" of the thirteen activities. Financial and staffing information for the individual NIF RDT&E activities is in Appendix B. Detailed analysis of the financial information appears in Chapter IV.

C. RATE STABILIZATION

1. Objectives of Rate Stabilization

The Assistant Secretary of the Navy for Financial Management (ASN(FM)) stated on 22 September 1976 that the overall objective of rate stabilization is to allow the Navy to achieve the budgeted "program" in the customer accounts by the elimination of the many cost increases in budgeted programs [Ref. 10]. According to Office of the Secretary of

Defense testimony to Congress, prior to implementation of rate stabilization, cost increases were passed on to the customers of NIF activities during a Fiscal Year through periodic increases in unit costs. The cost increases were caused by poor scheduling within the various shops of the NIF activities, inefficient skill among the workforce, inflation, and other causes. These increases led to reduction of customer programs in order to remain within fund availability. This reduction in the fund level, in turn, created further imbalances, thus causing more inefficiencies and ultimately leading to still further price increases [Ref. 10, Encl. (3)].

The ASN (FM) has stated that the Navy shares the concern regarding the unplanned increases in Industrial Fund rates and prices which had adversely impacted on the execution of essential customer programs [Ref. 11]. Rear Admiral Stanley Fine, Director of Budgets and Reports in the Office of the Comptroller of the Navy, believed that rate stabilization will be a boon to the Navy because it will allow annual accounts (primarily O&MN) to budget for cost escalation and thereby aid in solving the problem of reduced numbers of ship and aircraft overhauls [Ref. 12, Encl. (2)].

Therefore, a primary reason for implementing stabilized rates at NIF activities is to benefit the customers by giving them the ability to plan customer projects based on known rates rather than estimates [Ref. 4]. Another reason is to eliminate the adverse effects of cost growths during an operating fiscal year. Annual accounts (such as Operation and Maintenance, Navy (O&MN)) are precluded by the Office of

Management and Budget from budgeting for cost escalation. They can budget for published industrial fund rates, however, so that if the rates provide for inflation and are stabilized, the budgets for annual accounts are in effect allowed to include anticipated cost escalation. Any variance between actual costs and stabilized rate billings (profits or losses) which result will then be absorbed by the Industrial Fund, which becomes the "surge tank" [Ref. 12, Encl. (2)].

The Assistant Secretary of Defense, Comptroller (ASD(COMPT)), stated that stabilized rates will improve financial management by placing the long-range financial planning of the NIF activities on an equal footing with their customers [Ref. 4]. The ASN(FM) reminded, however, that NIF activity managers are still responsible for the annual operating results under rate stabilization just as they always have been [Ref. 10].

2. Characteristics of Rate Stabilization

The basic characteristics of rate stabilization will be presented in this section. In the next section, the RDT&E community objections to rate stabilization because of these characteristics will be explored. They are:

a. Set of Fixed Rates for Budgeting and Billing

According to the ASD(COMPT):

Rate stabilization means that each activity will establish a set of fixed rates based on its approved budget. The rates will be used to bill all customers for the goods and services they receive...The rates

may be expressed as costs per: manhour; manday; unit of output; unit of input; or any other manner which best suits the nature of the effort. An activity may have as many rates as is warranted by its organizational structure and by its diversity of workload. The rates will encompass all overhead costs, labor acceleration, direct labor and direct materials [Ref. 2].

The ASD(COMPT) waived the inclusion of direct materials in the rates of the NIF RDT&E activities [Ref. 2, Encl. (1)].

b. Publication of Rates

When rates are approved for a fiscal year, the individual activity should publish them to its customers, advising the customers that their work at that activity will be billed on the basis of the published stabilized rates [Ref. 10, Encl. (1)].

c. Projection of Cost Escalation in Rates

Budget submissions and rates are to include a projection of cost growth during the execution period. Specific guidance for the projections is provided by ASD (COMPT) for use in annual budget and rate projections [Ref. 14, Encl. (1)].

d. Approval of Rates

The activity group manager¹ approves the number and kind of rates to be established by each activity. Rates

¹The 13 NIF RDT&E activities are the RDT&E activity group. The activity group manager is the Office of Naval Research.

submitted by the activities are reviewed and adjusted by the activity group manager to provide the necessary changes to offset the total prior year gains or losses. Also, changes resulting from the Office of the Secretary of Defense review of the A-11 Budget and changes made in customer programs during the budget review cycle may result in changes being made to an activity's rates. [Ref. 15, p.2].

e. Approval of Rate Changes During Fiscal Year

Since the rates are stabilized for the operating Fiscal Year, changes are expected to be rare and may be made only upon approval of ASD(COMPT) [Ref. 15, p. 2]. ASD(COMPT) states:

The reason we are reserving approval of rate changes to OSD, is our explicit goal not to have any rate changes during the year as long as the DoD industrial fund corpus is sufficient to defer changes until we can budget for them [Ref. 13].

Another reason given by ASD(COMPT) for reserving authority to approve rate changes is:

In the event of unanticipated losses which cannot be absorbed by the fund, the full range of financial options needs to be reviewed before a decision can be made to change rates. Several of these options are not available to the Navy without the approval of the Secretary of Defense. One such option is the transfer of cash between revolving funds. Therefore, this office must retain the authority to review and approve within-year rate changes [Ref. 4].

f. Offsets for Gains or Losses

ASD(COMPT) provides that total prior year gains or losses will be made up in one year, unless this would

create extreme rate variations from year to year. In this case, the make-up period might be extended to two years by ASD(COMPT) on a case by case basis. Offsets for gains or losses are to be distributed uniformly in the rates of the activity group in which the gain or loss occurs [Ref. 14].

Guidance from the ASN(FM) seems to conflict with the ASD(COMPT) provisions, as follows:

The rate stabilization concept has been instituted as a multi-year budgetary concept in which the break-even point in NIF operations occurs at the end of a three year period, or at the end of the budget year. The prior concepts of a NIF operation wherein the objective was to break-even each year must be dispelled by activity management personnel [Ref. 10].

The basic Navy Comptroller instruction that implements rate stabilization, NAVCOMPT Instruction 7600.23 [Ref. 15], reflects the ASD(COMPT) provisions for offset of gains or losses in one year.

In the case that continual losses threaten the integrity of an individual activity's working capital, the Navy Comptroller will review the conditions and transfer corpus cash from other activities to that activity in order to ensure the viability of the activity's working capital. At a higher level, if significant losses result in one activity group, the movement of corpus among activity groups (for example from Public Works Centers to RDT&E activities) may be necessary [Ref. 10, Encl. (1)].

g. Improvement of Customer Planning

As stated earlier in the description of the objectives of rate stabilization, the customer benefits in his

planning process since he knows what rate will be charged for work he has performed at the activity.

h. Changes of Accounting Systems

Some Navy Industrial Fund activities had to restructure their billing systems in order to bill customers using the stabilized billing rate per manhour. The cost accounting systems, however, should not have to be changed, according to ASD(COMPT), since stabilized rates are billing rates, not costing rates [Ref. 13 and Ref. 2].

i. Improvement of Financial Management

The ASD(COMPT) stated that rate stabilization would improve financial management at the NIF activities [Ref. 4]. The ASN(FM) stated that rate stabilization should be considered as a tool of management. Rate stabilization variances should be viewed as a deviation of actual costs from the budgeted plan. Financial managers should investigate the underlying causes of such a deviation and take corrective management action to prevent future variances from occurring [Ref. 10, Encl. (1)].

There have been indications that local financial managers will be evaluated on how well they manage stabilized rate (as well as other) variances. The Naval Material Command (specifically the Director of Laboratory Programs) stated in a letter to the NIF RDT&E activities:

The addressees are cautioned not to build-in a margin of error since a large operating gain or loss, without adequate justification, will be viewed at higher levels as equally indicative of poor financial management. Therefore, it is advisable to develop and to

use those rates which, based on current workload plans, will result in a zero gain or loss in operations for the fiscal year [Ref. 12].

j. Inclusion of Test and Evaluation Direct Costs

The Test and Evaluation funding policy is that only the direct costs are to be charged to the "users" of the T&E facilities. Indirect costs (overhead costs) are to be charged to a separate "T&E Institutional Support" fund. This funding is appropriated as part of the RDT&E,N appropriation. In other words, NIF activities do not apply overhead cost to test and evaluation services as they do to research and development effort.

The Test and Evaluation funding policy was revised by ASD(COMPT) to accommodate rate stabilization for direct costs charged to users. A rate per unit of output for the direct portion of costs of using T&E facilities is developed and used for a full fiscal year. Indirect costs will continue to be charged to Institutional Support funds on the basis of actual accrued costs incurred. Gains and losses due to differences between actual direct costs and the stabilized rate will be retained in the industrial fund of the NIF activity and be used as a factor in establishing rates for the following fiscal year [Ref. 16].

3. Actual Implementation of Rate Stabilization at NIF RDT&E Activities

The Navy requested that the NIF RDT&E activities be exempted from rate stabilization for reasons that will be

covered in the next section of this chapter. The request was denied by ASD(COMPT), who stated:

While the gains to R&D activities from this policy may not be as significant as with other activities, we have not discerned that there would be any disadvantages from their participation. Certainly, the R&D customers would benefit from this policy [Ref. 13].

While the activities did not concur with the rationale of the benefits of rate stabilization, they began implementation in January 1976 [Ref. 17]. The implementation was accomplished in two steps. The first step was to establish and "freeze," effective 1 January 1976, the overhead rates and direct labor acceleration rate for each cost center. The second step was to develop techniques for establishing and billing stabilized rates as soon as possible but no later than 1 October 1976. [Ref. 17] All NIF RDT&E activities accomplished the full implementation by 1 October 1976.

Basic guidance and direction for rate stabilization in the Navy is provided by the Comptroller of the Navy in NAVCOMPT Instruction 7600.23 [Ref. 15]. This instruction contains a concise description of all the characteristics and provisions of rate stabilization discussed in this section, plus detailed provisions for implementing and accounting for rate stabilization and resulting stabilized rate variances.

D. NIF RDT&E COMMUNITY PERCEPTIONS OF RATE STABILIZATION

1. Definition of NIF RDT&E Community

The perceptions in this section were expressed in written point papers and correspondence in the latter half of calendar year 1976. These perceptions were summarized in the earlier thesis [Ref. 3], and are presented here as background because they are updated by this thesis. The NIF RDT&E Community from whom perceptions were sought in 1976 included the Special Assistant for Financial Management with the Office of the Assistant Secretary of the Navy for Research and Development (referred to as the Special Assistant), and nine NIF RDT&E activities. The nine activities include the eight laboratories under the Director of Laboratory Programs in the Naval Material Command and the Naval Research Laboratory under the Office of Naval Research. Four activities under the Naval Air Systems Command and the Civil Engineering Laboratory were not included in the survey, nor were the customers of any of the activities.

2. General Perceptions

The overall perception expressed by the Special Assistant was that: "There is no known rationale to justify the application of rate stabilization to the R&D environment . . . [Ref. 18].

The nine activities were divided in their perceptions of rate stabilization. The Naval Weapons Center point paper,

[Ref. 19, p.1], stated that rate stabilization is conceptually workable and in fact offers potential advantages for the laboratories. Four of the other laboratories agreed and five disagreed [Refs. 20-28]. One of the five that disagreed stated that any conceptually workable rate stabilization program would have to embody some measure of flexibility to adjust rates to changing conditions, but this is contrary to Secretary of Defense policy [Ref. 24]. One of the four activities that agreed stated that with adequate implementation lead time and sponsor (customer) participation, stabilized rates could provide better tools for program planning and execution than were previously being employed [Ref 21]. None of the activities perceiving that rate stabilization could benefit the laboratories were explicit in stating how it could be used for improved planning and management.

3. Specific Perceptions

a. Distortions of Costs

Costs can be distorted in that salary levels vary considerably depending upon the nature of the individual research and development project. If standard rates based on average salary costs in each cost center are used, those projects employing relatively low cost labor would necessarily subsidize those projects which require high cost labor. And those projects which require high cost talent would not bear their full share of the costs [Ref. 18].

The Laboratory Director of one of the activities expressed this concern very clearly:

My principal concern about the current implementation is that we have one fixed labor rate per department or more accurately per cost center. This means that a secretary costs the same as an engineering technician, who costs the same as a junior engineer, who costs the same as a senior engineer...This is obviously unfair to the sponsor who assigns...a job which... could be largely accomplished by junior engineers, technicians, and other lower salaried personnel while giving a break to the job that requires highly skilled personnel...[Ref 29].

ASD(COMPT) replied that they recognize that labs have a wide range of salaried employees, but asserted that their policy allows the flexibility needed to reduce the distortions to insignificant amounts. They stated that separate rates could be established for clerical, technical and scientific manhours within a cost center or division, or could be established in some other manner [Ref. 4]. The Laboratory Director quoted above went ahead to propose such a system of establishing rates. Three of the laboratories have established multiple rates per cost center, acting on the perception that distortions of costs can be "mitigated only through the use of extensive rate tables to accommodate the wide variations" in salary levels [Ref. 30, Encl. (1)].

b. Improper Use of Personnel

Several of the activities alluded to the perception that an average billing rate for a cost center would result in improper use of personnel. The Laboratory Director quoted above stated this perception as follows:

More important (than the cost distortion caused) is the fact that the incentive for the manager to

properly use his personnel is lost. Each manager will try to use the most senior and hopefully most talented people to do all tasks on his job. He will not have the incentive to use junior engineers or junior people for the less demanding jobs...We thus will not get the most out of a broad mix of people at the Center [Ref. 29].

c. Rate Stabilization Not Needed to Project Cost Escalation

Rate stabilization is beneficial for customers needing to project cost escalation in budgets for annual accounts such as O&MN. However, the RDT&E account is currently allowed to budget for anticipated cost escalation for major systems (about 40 percent of the total appropriation). The remainder of the appropriation is augmented by supplemental appropriations for civilian pay increases [Ref. 30, Encl. (1)]. Constraints on the total DoD and Navy budgets make it unlikely that the total RDT&E budget will be any larger as a result of the rate stabilization add-on. The conclusions were that rate stabilization is not needed in the RDT&E account and that total budget constraints limit projections for cost escalation.

d. Rate Stabilization Not Compatible With The R&D Planning Process

The Special Assistant for Financial Management stated that planning and budgeting estimates for R&D projects are negotiated between the performing activities and their customers on bases other than manhour rates. The scope of work and total estimated cost are agreed upon, not usually manning levels or composition of the workforce on the project. If rates per manhour are fixed, budgeteers and program managers (customers) would still go through the present process

in evaluating the scope and total cost of a specific project, and then would simply convert the cost into manhours for the sake of complying with the rate stabilization procedure [Ref. 30, Encl. (2)].

e. Stabilized Rates of Limited Usefulness to The Customers

The perception that rate stabilization is not compatible with R&D planning supports the perception that stabilized rates are of limited usefulness to customers of the activities. One activity stated that publishing stabilized performing cost center rates does not provide the customer with useful data for planning since he cannot estimate what the mix of performing cost centers working on his project will be [Ref. 25]. Often more than one cost center will perform on a single customer project. To use the published rates in planning, the customer must determine how much of his project will be performed by each of the cost centers at the activity. And he must make this determination 15 to 18 months in advance.

Another activity stated that significant cost variances in projects will still occur because of fluctuations in manpower requirements and contract requirements. The activity continued that: "Laboratory labor and overhead rates have not been the whipsaw factor preventing accurate planning in the past." [Ref. 27] Variances in actual labor costs are generally due to changes in the scope of work, not in labor rates [Ref. 30, Encl (2)].

In an internal memorandum, the Laboratory Director of one of the NIF RDT&E activities put it this way:

If we in the laboratories are guilty of poor cost estimating it is not because we have done a bad job of estimating the cost per hour, but it is in estimating the number of manhours required to accomplish a job. Therefore, I cannot see how rate stabilization can possibly make our sponsors' budgeting processes more accurate [Ref. 29].

f. Shifting of Management Control To Higher Levels of Management

The perception of the NIF RDT&E Community was that management control is being shifted to higher levels of management in the areas of approval of rate changes and adjustment of rates at the activity group level to offset gains and losses. This shift strips local managers of financial control of their activities and provides a disincentive for activity managers. One Navy official outside the NIF RDT&E Community, the Assistant Secretary of the Navy for Financial Management, (ASN(FM)), expressed reservations over the:

apparent departure from the long established principle that control of Industrial Fund operations is vested at the activity/activity group level. Approval of rates by your office implies management of the financial and operational aspects of the industrial fund to an unprecedented degree [Ref. 11].

Under rate stabilization, gains and losses of prior years are routinely offset by a uniform adjustment to the rates of the individual activities in the activity group. In more extreme cases, such as in the case in which a single activity has a very large loss, actual accounting adjustments may be made by the Navy Comptroller to transfer NIF working capital among activities. The NIF RDT&E community had the

perception that these higher level adjustments of activities' rates and working capital accounts would strip local managers of financial control of their activities and provide disincentives to the managers.

Covering the losses of some laboratories by others was felt to (1) remove the incentive for a laboratory Commander to economize in his operations, and (2) limit his ability to make local management decisions.

One activity stated that redistribution "at the activity group level impedes local Command incentive to develop and perform against realistic budgets." [Ref. 22] Part of the disincentive is a result of the requirement to submit budgets in a manner which will produce deficits or unreasonable profits at their activities in order to help make up a gain or loss at the activity group level [Ref. 31]. Also, the uniform distribution within an activity group could result in an individual activity perpetuating an operating loss indefinitely [Ref. 10, Encl. (1)]. The perception is that a laboratory that incurs a loss should alone retain the responsibility to recover those losses [Ref. 19, p. 2].

g. Loss of Local Management Flexibility

The NIF RDT&E activities expressed a consensus of opinion that local activities need some flexibility to change rates during a fiscal year. The primary reason given was that research and development is a dynamic process with many fluctuations during a fiscal year. The Naval Weapons Center point paper [Ref. 19] stated the problem as follows:

In spite of our best planning efforts, the budgets for individual projects fluctuate throughout...the current fiscal year. Often we do not know the final funding picture until late in the fiscal year... RDT&E is a dynamic program, subject to shifting priorities at the Systems Command and CNO level. Projects are accelerated, slowed down, or cancelled on short notice...This funding picture coupled with stabilized rates can be devastating to a laboratory [Ref. 19, p. 2].

A second reason given for retaining the flexibility to adjust rates at the local level was that planning data available to the activities when rates are established is poor.

The Naval Weapons Center paper analyzed planning data received from its primary customers. Planning data available from the customers only two months prior to the beginning of the fiscal year was compared to actual funding received during the fiscal year. Only 25 percent of the projects were funded by the customers within 10 percent of their plans [Ref. 19, Encl (2)]. The point paper stated that these customers provided better planning data than other customers. The conclusion was that stabilized rates based on customer planning data as long as 15 months in advance are irrelevant to the real cost of doing research and development [Ref. 19, p. 2]. Another laboratory stated that only one of its customers provided reliable comprehensive funding plans for the budget year, and that the plans constituted less than 30 percent of the activity's total funding [Ref. 24].

One solution recommended was to allow local Commanders the flexibility to adjust internal individual cost center rates in order to maintain "the solvency of the laboratory and each of its cost centers, even though the overall

laboratory manday rates remain fixed." [Ref. 19, p. 2]

Another activity stated that an adjustment of rates just prior to commencement of the fiscal year would overcome most of the problems inherent in the present requirement for long range projections based on "sketchy and unstable planning data." [Ref. 24] The ASN(FM) agrees with the latter proposed solution, as stated in this quote:

As the execution year approaches, there may be situations that occur which make it imperative, in terms of good management and judgement, that stabilized rates be adjusted even with the inherent impact on the customer's budgeted "program." However, extreme diligence must be used in preparing a case for such adjustments in terms of supportive arguments before it can be sent to OSD for approval [Ref. 10].

One activity did not agree with the above analysis. It expressed the opinion that it is possible to estimate rates 15 months in advance [Ref. 23, Encl. (1)].

h. Diversion of Management Attention

The NIF RDT&E activity managers have been informed that they will be held accountable for variances [Refs. 10 and 12]. If large variances are experienced during a fiscal year, ASD(COMPT) approval must be requested to adjust the stabilized rates. In the earlier thesis on rate stabilization, Messrs. Kramer and Solberg expressed the concern that activity managers will manage with too much emphasis on minimizing stabilized rate (and other) variances. They state that this bias may not be undesirable in itself, but that it does not relate to the basic missions of the activities [Ref. 3, p. 68].

i. Loss of Incentives For Tight Cost Control

Two activities raised the possibility that stabilized rates may decrease incentives to control costs. When the stabilized rates for an activity or cost center turn out to be generating a profit, there is no incentive to have a "lean and cost-effective overhead operation, rather there would be a tendency to spend the anticipated profit in overhead, so as not to lose all or part of it to other activities." [Ref. 25] In the case where rates were too high, an increase in overhead spending would prevent a large operating gain at year's end that would have to be explained and justified [Ref. 32]. On the other hand, if the rates were set too low, an activity may be inclined to adjust some people from overhead to direct cost.

j. Adverse Effects on Accounting Systems

The Special Assistant for Financial Management in the office of ASN(R&D) expressed the following concern:

The requirement to bill for direct labor on a rate basis rather than actual costs will require additional accounting work and introduce undesirable complexities in the cost accounting systems at the laboratories...An additional burden would be imposed on an already overburdened accounting system with no discernable benefits, but great disadvantages [Ref. 18].

The Naval Weapons Center point paper highlighted two of the complexities. One is that the NIF RDT&E activities now have five different ways to bill a customer. They are:

1. actual costs without overhead applied (family housing),
2. fixed price,
3. stabilized rate,

4. actual costs plus unfunded costs (Foreign Military Sales), and

5. stabilized rate plus unfunded costs (private parties).

The other complexity that was highlighted was the "variances within variances." These are:

1. the variance between stabilized billings and costs,
2. the variance between overhead applied and actual overhead costs incurred,

3. the variance between acceleration for leave and benefits and the actual leave and benefits costs, and

4. the fixed price variance for fixed price orders
[Ref. 19, p. 3].

One activity stated that the cost and management time involved in maintaining the rate stabilization system would not be justified by the results achieved. "With little payoff it becomes a make-work system." [Ref. 27] Still another activity stated that the expense of implementing and maintaining the system "represents a bite from limited Navy resources which might otherwise serve a more defined purpose." [Ref 28]

4. Summary

The activities were divided in their perceptions whether rate stabilization is advantageous. They did agree that local activity managers lose flexibility and some control of their activities. Some believed that rate stabilization does not benefit the customers of NIF RDT&E activities. The objectives of this thesis, restated again, are:

1. to update the perceptions of these nine NIF RDT&E activities after over a year of experience with rate stabilization,

2. to add the perceptions of the four other NIF RDT&E activities, and

3. to obtain the perceptions of the customers of the NIF RDT&E activities.

The methods of achieving these objectives are the subject of the next chapter.

III. RESEARCH METHODOLOGY

A. SURVEY OF PERCEPTIONS OF ACTIVITY MANAGERS

Questionnaires were used to determine the opinions and perceptions of NIF RDT&E activity managers after operating experience with rate stabilization. The questionnaires were mailed to the 13 NIF RDT&E activities listed in Appendix A in early February 1978. Copies of the questionnaires are in Appendixes C, D, and E. The questionnaires invited all respondents to make written comments in addition to responding to the statements and questions in the questionnaire. Three questionnaires were sent to each activity, one for Commanders and Technical Directors, one for Comptrollers, and one for Cost Center or Program Managers.

1. Questionnaire for Commanders and Technical Directors

Two copies of this questionnaire were sent to each of the activities. Both the Commander and the Technical Director at nine of the activities responded, as did one of the two at the other four activities. The responses have been tabulated on the sample questionnaire in Appendix C. The responses and the comments are summarized and analyzed in Chapter IV.

2. Questionnaire for Comptrollers

One copy was sent to each activity for the Comptroller. A portion of the questionnaire asked for the Comptroller's

perception of the impact of rate stabilization on himself and other managers at the activity level. Another portion, to be completed by a staff member, asked questions about how the activity implemented rate stabilization; for example, what variance reports were developed, how rates are used during budget execution, and how rates have changed budget preparation. All 13 activity Comptrollers responded, many with written comments. The responses are tabulated on the sample questionnaire in Appendix D. The responses and comments are summarized and analyzed in Chapter IV.

3. Questionnaire for Cost Center and/or Program Managers

Two copies of this questionnaire were sent to each activity in order to obtain the responses of two Cost Center or Program Managers at each activity. Twelve of the activities returned at least two responses. Three of the twelve returned from three to sixteen responses. Since the objective of this thesis is to obtain the opinions of individual Cost Center and/or Program Managers, the "extra" responses are included in the findings and analysis. The 47 responses are tabulated on the sample questionnaire in Appendix E. The responses and comments are summarized and analyzed in Chapter IV.

In summary, responses were received from 85 percent of the Commanders and Technical Directors, 100 percent of the Comptrollers, and, including the extras returned by some activities, 181 percent of the number requested from the Cost

Center and Program Managers. In all categories of respondents, a majority of the responses included written comments in addition to the responses to the questionnaire items.

B. SURVEY OF PERCEPTIONS OF ACTIVITY CUSTOMERS

In discussions with the Special Assistant for Financial Management to the Assistant Secretary of the Navy, Research and Development, the determination was made that a large majority of the customers of the 13 NIF RDT&E activities are in three systems commands. They are the Naval Air Systems Command, the Naval Sea Systems Command, and the Naval Electronics Systems Command. Since the Comptroller of each Systems Command knows specifically who in the Systems Command is a customer of the NIF RDT&E activities, 40 copies of the questionnaire were sent to the Comptroller of each of the three Systems Commands for further internal distribution. Of the 120 questionnaires so distributed, 52 (or 43 percent) were returned. Many of the returned questionnaires included extensive and useful written comments.

The questionnaires for customers were designed to determine whether they use stabilized rates in planning and budgeting, and, if so, how. Customers were also asked how rate stabilization has affected their relationships and communications with the NIF RDT&E activities. These questionnaires were designed with the assistance of financial personnel in the offices of the Assistant Secretary of the Navy, Research and Development, and the Director of Navy Laboratories. The

responses to the questionnaires are tabulated on the sample in Appendix F. Summaries of the responses and comments are presented and analyzed in Chapter IV.

C. SURVEY OF PERCEPTIONS OF NAVY HEADQUARTERS PERSONNEL

Perceptions of Navy Headquarters personnel were obtained in one to two-hour interviews with key financial personnel during the week of 2-6 January 1978. The personnel interviewed were in the following offices: (1) the Operations Division (NCB-1) of the Office of Budget and Reports (NCB) and the Industrial Systems Branch (NCF-71) of the Functional Systems Division (NCF-7), both in the Office of the Comptroller of the Navy; (2) the Office of the Assistant Secretary of the Navy, Research and Development; and (3) the Office of the Director of Laboratory Programs in the Naval Material Command. Some of the key financial personnel had made studies of rate stabilization in the NIF RDT&E activities, which were reviewed. The information obtained in the interviews and reviews of the studies is presented as appropriate in Chapter IV.

D. FINANCIAL IMPACT OF RATE STABILIZATION IN FISCAL YEAR 1977

In addition to the research on perceptions as stated above, financial statements for the 13 NIF RDT&E Activities for Fiscal Year 1977 were analyzed and consolidated. The analysis was made to determine the "profits" or "losses" of

the activity group and of the individual activities that were attributed to stabilized rates. Then the stabilized rate variances were compared at both the individual activity and the activity group levels to other variances, such as over- or under-applied production and general overhead. The purpose of this comparison was to determine the impact of rate stabilization variances relative to the other variances. Finally, documentation of the NIF RDT&E activity budget submissions for Fiscal Years 1978 and 1979 was reviewed to determine the degree of impact that Fiscal Year 1977 variances had on rates for the later years. The detailed findings are presented in Appendix B and analyzed in Chapter IV.

E. ANALYSIS OF THE METHODS USED TO ESTABLISH RATES

The two methods of establishing rates, discussed in Chapter I, were compared using randomly selected statistical samples at two NIF RDT&E activities. One sample was selected for the Naval Weapons Center (NWC) which used one rate for each cost center. The other sample was selected for the Naval Air Development Center (NADC) which used fifteen rates per cost center. Samples were selected from reports of stabilized rate variances by customer order number (individual customer job). Since a wide range of project or job sizes exists, the variances on the reports were converted into percentage variances to enable meaningful comparison. The percentage stabilized rate variances were calculated as follows:

1. Manhours X Stabilized Rate = Billing Amount (B)
2. Accelerated Direct Labor + Overhead Applied to the Project = Cost (C)
3. Dollar Variance = \$B - \$C = \$V
4. Percentage Variance = $\$V \div \$C \times 100 = V\%$

An example may clarify the calculation:

| | <u>CASE A</u> | <u>CASE B</u> |
|----------------------|---------------|---------------|
| Billing Amount: | \$48,880 | \$28,590 |
| Costs | <u>48,080</u> | <u>31,030</u> |
| Dollar Variance: | \$ 800 | \$-2,440 |
| Percentage Variance: | + 1.66% | - 7.86% |

The statistical samples were randomly selected in a way to provide percentage variance estimates for the population that are accurate within plus or minus one percent at a 90 percent confidence level. Of 1,334 active customer orders at NWC, 147 were selected for the sample. Of about 640 active customer orders at NADC, 75 were selected.

For each sample, that is, for each method of establishing stabilized rates, the average percentage variance was calculated. A histogram showing the range and distribution of each sample of variances was constructed. In addition, in order to test a hypothesis made in the earlier thesis that smaller projects would experience larger percentage variances than would larger projects [Ref. 3, p. 41], a correlation of the size of the individual project to the percentage of variance is made. Findings are presented in Chapter IV.

Another aspect of comparison of the two methods is comparison of the usefulness of information provided by each method to the customers of the activities. Proliferation of stabilized rates may add complexity to the customers' tasks of developing budgets. Questionnaire responses and published rate schedules were analyzed to determine the usefulness of one rate per cost center versus many rates per cost center. Findings are presented in Chapter IV.

IV. PRESENTATION OF RESEARCH FINDINGS

A. FORMAT

Research findings will be presented in the following format:

1. responses to questions unique to NIF RDT&E activity financial managers,
2. responses to questions unique to the customers of the NIF RDT&E activities,
3. responses to questions common to both the activity financial managers and the customers,
4. Navy headquarters personnel comments,
5. financial impact of rate stabilization in Fiscal Year 1977, and
6. analysis of two methods of establishing rates.

The distribution of responses for most questions will be presented in table format. This presentation will be followed by a summary of the amplifying comments received from the respondents.

B. RESPONSES TO QUESTIONS UNIQUE TO NIF RDT&E ACTIVITY FINANCIAL MANAGERS

1. Presentation of Questionnaire Responses

Table I contains the percentage distributions of NIF RDT&E activity managers' responses.

Table I. NIF RDT&E Activity Financial Manager Responses

| Question/Statement | No. * | Percentage of Responses ** | | | | |
|--|-------|----------------------------|------|------|------|------|
| | | SA | A | D | SD | DK |
| 1. The stabilized rate policy is another manifestation of the trend to centralize and standardize management control. | | | | | | |
| a. Commanders/Technical Directors | 22 | 36.4 | 59.1 | 0.0 | 0.0 | 4.5 |
| b. Comptrollers | 13 | 69.2 | 30.8 | 0.0 | 0.0 | 0.0 |
| c. Cost Center/Project Managers | 47 | 36.2 | 34.0 | 14.9 | 2.1 | 12.8 |
| 2. Centralization of management control is desirable in this case. | | | | | | |
| a. Commanders/Technical Directors | 22 | 0.0 | 0.0 | 59.0 | 36.4 | 4.5 |
| 3. Stabilized rates take away one area of flexibility that local activities should retain. This is the flexibility to periodically change cost center and general overhead rates during a fiscal year in order to minimize gains and losses. | | | | | | |
| a. Commanders/Technical Directors | 22 | 59.1 | 40.9 | 0.0 | 0.0 | 0.0 |
| b. Comptrollers | 13 | 46.2 | 46.2 | 7.6 | 0.0 | 0.0 |
| c. Cost Center/Project Managers | 47 | 48.9 | 42.6 | 6.4 | 2.1 | 0.0 |
| 4. NIF RDT&E activity commanders ought to be allowed the fiscal flexibility to make the best possible decisions to accomplish the assigned mission. | | | | | | |
| a. Commanders/Technical Directors | 22 | 81.8 | 18.2 | 0.0 | 0.0 | 0.0 |

*No. = Number of Responses ** D = Disagree
 **SA = Strongly Agree SD = Strongly Disagree
 A = Agree DK = Don't Know

Table 1: NIF RDT&E Activity Financial Manager Responses (Continued)

| Question/Statement | No. | Percentage of Responses | | | | |
|--|-----|-------------------------|------|------|------|------|
| | | SA | A | D | SD | DK |
| 5. Increasingly conservative behavior by management of NIF RDT&E activities will be one result of rate stabilization; that is, commanders and other managers will be biased in favor of courses of action which minimize the probability of large variances. | 22 | 22.7 | 40.9 | 27.3 | 0.0 | 9.1 |
| a. Commanders/Technical Directors | 13 | 0.0 | 53.8 | 30.8 | 15.4 | 0.0 |
| b. Comptrollers | | | | | | |
| 6. Stabilized rates, once set, may become self-fulfilling objectives, that is, management may transact its business with one eye on how the rates are working out. | 22 | 18.2 | 63.7 | 13.6 | 0.0 | 4.5 |
| a. Commanders/Technical Directors | | | | | | |
| 7. The preoccupation with breaking even may detract from the pursuit of the basic mission and goals of the activity. | 22 | 9.1 | 68.2 | 18.2 | 4.5 | 0.0 |
| a. Commanders/Technical Directors | | | | | | |
| 8. The requirement to explain variances, coupled with the fact that higher level command adjusts for gains and losses, provides an incentive for improved planning and cost control at the NIF RDT&E activity level. | 22 | 0.0 | 9.1 | 59.1 | 18.2 | 13.6 |
| a. Commanders/Technical Directors | 13 | 0.0 | 23.1 | 46.2 | 30.8 | 0.0 |
| b. Comptrollers | | | | | | |

Table I: NIF RDT&E Activity Financial Manager Responses (Continued)

| Question/Statement | No. | Percentage of Responses | | | |
|---|-----|-------------------------|------|------|------|
| | | SA | A | D | DK |
| 9. Gains or losses at NIF RDT&E activities, whether caused by stabilized rates or by uncontrollable external factors, will be viewed as a negative reflection on the Commanders and Comptrollers of the activities. | | | | | |
| a. Commanders/Technical Directors | 22 | 13.6 | 63.7 | 9.1 | 0.0 |
| b. Comptrollers | 13 | 38.5 | 34.6 | 11.5 | 0.0 |
| 10. Suppose that the thirteen NIF RDT&E activities as a group were to show a cumulative operating loss in Fiscal Year 1978 of \$10 million and a gain in Fiscal Year 1979 of \$12 million. The fluctuations are caused by a combination of inflation that was not anticipated, errors in setting rates, changes in workload, etc. Your reactions to this situation are (Comptrollers' responses): | | | | | |
| a. The fluctuations are "unfair and unfortunate" since Fiscal Year 1979 customers "will pay" for costs actually incurred by the activities for Fiscal Year 1978 customers. | 13 | 46.2 | 30.8 | 23.0 | 0.0 |
| b. Rate stabilization will increase the occurrence of such fluctuations. | 13 | 38.5 | 61.5 | 0.0 | 0.0 |
| c. Rate stabilization will decrease the occurrence of such fluctuations. | 13 | 0.0 | 0.0 | 53.8 | 46.2 |
| d. You have to be able to justify why a gain or loss has occurred, but the mere fact of a significant gain or loss is not of concern. | 13 | 0.0 | 11.5 | 50.0 | 38.5 |
| | | | | | 0.0 |

Table I: NIF RDT&E Activity Financial Manager Responses (Continued)

| Question/Statement | No. | Percentage of Responses | | | | |
|--|-----|-------------------------|------|------|-----|------|
| | | SA | A | D | SD | DK |
| 11. Gains and losses of NIF RDT&E activities are compensated for in ensuing fiscal years by a uniform adjustment of the rates of all the activities in the activity group. This uniform adjustment removes incentives for NIF RDT&E activity managers (commanders, technical directors, cost center managers, comptrollers) to attempt to control costs or break even since other activities will help make up a loss or will share in a gain. | | | | | | |
| a. Commanders/Technical Directors | 21 | 52.4 | 33.3 | 14.3 | 0.0 | 0.0 |
| b. Comptrollers | 13 | 38.5 | 46.1 | 15.4 | 0.0 | 0.0 |
| 12. The setting of rates at a particular activity can be affected by factors that have nothing to do with the activity itself; for example, a gain or loss experienced by the activity group as a whole. This has a psychological impact upon you as a manager. | | | | | | |
| a. Commanders/Technical Directors | 22 | 27.3 | 54.5 | 9.1 | 0.0 | 9.1 |
| b. Comptrollers | 13 | 30.8 | 61.5 | 7.7 | 0.0 | 0.0 |
| c. Cost Center/Project Managers | 47 | 27.7 | 55.3 | 6.4 | 0.0 | 10.6 |
| 13. Each NIF RDT&E activity ought to be fully responsible for its own gains and losses; that is, it should fully compensate for its own gains and losses by adjusting its own rates. | | | | | | |
| a. Commanders/Technical Directors | 22 | 86.4 | 6.8 | 6.8 | 0.0 | 0.0 |
| b. Comptrollers | 13 | 76.9 | 19.3 | 3.8 | 0.0 | 0.0 |
| 14. One impact of rate stabilization upon NIF RDT&E activities is modification of the planning and budgeting process necessitated by an increase in the planning lead time, i.e., planning taking place up to 18 months before the budget year. | | | | | | |
| a. Comptrollers | 13 | 38.5 | 38.5 | 23.0 | 0.0 | 0.0 |

Table I: NIF RDT&E Activity Financial Manager Responses (Continued)

| Question/Statement | No. | Percentage of Responses | | | | |
|--|-----|-------------------------|------|------|------|-----|
| | | SA | A | D | SD | DK |
| 15. Implementation of stabilized rates has changed how your activity prepares budgets. | 13 | 0.0 | 69.2 | 30.8 | 0.0 | 0.0 |
| 16. You expect to improve your rate determination techniques with experience. | 13 | 0.0 | 69.2 | 30.8 | 0.0 | 0.0 |
| 17. The 18-month lead time for developing stabilized rates will lead NIF RDT&E activities to use more scientific and refined planning and budgeting methods in order to develop rates that are as accurate as possible. | | | | | | |
| a. Commanders/Technical Directors | 22 | 0.0 | 22.7 | 31.8 | 36.4 | 9.1 |
| b. Comptrollers | 13 | 0.0 | 38.4 | 30.8 | 23.1 | 7.7 |
| 18. One impact of the longer lead time, coupled with stabilized rates, is an increase in the NIF RDT&E activity's vulnerability to upheavals in the economy, for example, to steep increases in fuel and utility prices. | | | | | | |
| a. Comptrollers | 13 | 38.5 | 38.5 | 23.0 | 0.0 | 0.0 |
| 19. Since the stabilized rates are estimated as long as 18 months before the budget year, they (comptrollers' responses): | | | | | | |
| a. Can be accurate if estimated very carefully. | 13 | 0.0 | 23.1 | 46.2 | 23.1 | 7.6 |
| b. Are of questionable accuracy. | 13 | 30.8 | 53.8 | 15.4 | 0.0 | 0.0 |
| c. Will guarantee operating losses, given conservative inflation factors provided in the budget guidance coupled with unanticipated changes in the economy and fixed rates. | 13 | 15.4 | 46.2 | 30.8 | 0.0 | 7.6 |

Table I: NIF RDT&E Activity Financial Manager Responses (Continued)

| Question/Statement | No. | Percentage of Responses | | | | |
|---|----------------|-------------------------|----------------------|----------------------|---------------------|-------------------|
| | | SA | A | D | SD | DK |
| 20. The use of inflation factors provided by the Office of the Secretary of Defense in budget guidance results in accurate projections of what costs will be in the budget year. a. Comptrollers | 13 | 0.0 | 19.2 | 50.0 | 30.8 | 0.0 |
| 21. Real benefits to NIF RDT&E activities can be obtained by use of stabilized rates rather than actual costs in planning, budgeting, and budget execution. a. Comptrollers b. Cost Center/Project Managers | 13 47 | 0.0 2.1 | 23.0 17.0 | 38.5 40.5 | 38.5 34.0 | 0.0 6.4 |
| 22. Stabilized rates provide information to you as cost center managers and project managers that is useful in managing your cost center and/or project. a. Cost Center/Project Managers | 47 | 2.1 | 19.2 | 57.4 | 21.3 | 0.0 |
| 23. Rate stabilization aids the NIF RDT&E activity during the budget execution period in the following ways (comptrollers' responses): a. It aids in controlling cost center costs, since proposed cost center expansions may not be allowed on the basis that they have not been planned during stabilized rate determinations. b. Stabilized rates provide a useful tool for variance analysis and/or provide useful information for cost control during the fiscal year. c. Stabilized rates are of no or of little aid during execution. | 13 13 13 | 0.0 0.0 23.1 | 26.9 42.3 34.6 | 42.3 26.9 42.3 | 30.8 30.8 0.0 | 0.0 0.0 0.0 |

Table I: NIF RDT&E Activity Financial Manager Responses (Continued)

| Question/Statement | No. | Percentage of Responses | | | | |
|--|-----|-------------------------|------|------|-----|-----|
| | | SA | A | D | SD | DK |
| 24. At your activity, stabilized rates and rate variances are used as follows (Comptrollers' responses): | | | | | | |
| a. For cost control and analysis at the individual customer order level. | 13 | 0.0 | 46.2 | 53.8 | 0.0 | 0.0 |
| b. For cost control and analysis at the cost center level. | 12 | 0.0 | 75.0 | 25.0 | 0.0 | 0.0 |
| c. For cost control and analysis at the overall activity level. | 13 | 0.0 | 69.2 | 30.8 | 0.0 | 0.0 |
| 25. Even though stabilized billing rates are fixed, your activity adjusts production and general overhead rates during the fiscal year to minimize over-/under-applied overhead. | | | | | | |
| a. Comptrollers | 13 | 0.0 | 30.8 | 69.2 | 0.0 | 0.0 |

In addition to the responses presented in Table I, three responses are presented below which did not fit the format of Table I.

1. How much of your time is now spent on rate stabilization that was previously spent on other activities?

| a. Responses: | <u>Comptrollers</u> | <u>Cost Center/ Project Manager</u> |
|---------------|---------------------|---|
| Less than 10% | 46.2% | 100% |
| 10% to 25% | 46.2 | |
| 26% to 50% | 7.6 | |
| Over 50% | 0.0 | |

2. What effect has stabilized rates had on your relationships and communications with your contacts with customers?

| | |
|---|------|
| a. Cost Center/Project Manager responses: | |
| Improved relations and communications | 6.4% |
| Little or no effect | 55.3 |
| Caused problems | 31.9 |
| Other (or no answer) | 6.4 |

3. Have program managers in the systems commands (customers) brought pressure upon you to assign the more highly paid personnel to their program (since all personnel cost them the same under stabilized rates)?

| | |
|---|------|
| a. Cost Center/Project Manager responses: | |
| Yes, often | 8.5% |
| Sometimes | 12.8 |
| Rarely | 21.3 |
| Never | 44.7 |
| Don't know | 10.6 |
| Not applicable | 2.1 |

2. Summary of Amplifying Comments

a. Commanders/Technical Directors

On the centralization of management control issue, one respondent commented: "Activity commanders are trained to command--let them command!--and hold them accountable." In response to the statement that local commanders ought to have

fiscal flexibility, one respondent commented: "Particularly true, since we do have periodic inspections."

One respondent stated that the incentive for most of the managers is in a personal ethic, in the desire to do well and give the taxpayer and the servicemen a good deal. Another commented that incentives depend upon the individual person, not upon stabilized rates. A third stated that, "Conscientious managers will manage conscientiously."

One respondent commented that rate stabilization encourages "maximum irresponsibility on the part of activity managers." He continued that since rates are fixed and losses are made up from the results of other activities, "the incentive for prudent management is removed."

On the question whether rate stabilization improved budgeting methods, one respondent stated that the question presupposed that the NIF RDT&E activities have not been using scientific and refined planning and budgeting methods. He stated that this is not true at his activity and that his activity used methods "that are as scientific and refined as practical." He added that rate stabilization has forced the activity "to guesstimate its future budget whereas it used to determine it quite precisely."

Respondents commented that R&D workload and people mix cannot be predicted 18 months in advance of the budget year. R&D work is not routine and the firm program is not known until the first quarter of the budget execution year has passed.

There were several comments concerning gains and losses. One respondent noted that no one notices gains or losses at NIF RDT&E activities. Another responded that activity managers cannot be held accountable for losses incurred since they cannot take corrective action when they know that they will incur a loss. His example was that during periods of stabilized rates, drawdowns occur in activity ceilings, and since rates cannot be changed, wild swings occur in the profits and losses.

On the question whether each activity ought to be fully responsible for its own profits and losses, one respondent stated that making each activity individually responsible is fine as long as its workload is constant. He stated that for an activity that has a widely variable workload, "a bad year could be disastrous."

Two respondents made comments on the impact of stabilized rates on budget execution. One stated that by the time budget execution takes place, the budget is most likely obsolete due to changes in labor costs, utility costs, workload, and so on. Each year will therefore start with most cost center managers trying to manage with an operating budget that is not valid. The other respondent commented that once the rate is fixed, the only variable is overhead cost. Since overhead costs are mostly fixed, there is almost no freedom except rather drastic actions such as reduction in force of the indirect labor, and so forth.

Two respondents pointed out that the rate stabilization program does not encourage conservative use of overhead

funds. One stated that "the incentive to minimize overhead costs is undermined."

b. Comptrollers

One comptroller commented on the conservative behavior of managers in these words: "Despite indignation, huffing, puffing and bravado, this has certainly been the consequence to date."

One comptroller responded that the commanders and comptrollers themselves view gains and losses as a negative reflection on their management. He added that he does not know the view of the Headquarters people despite the fact that they have told the activities not to view gains and losses as a negative reflection.

One respondent stated that to offset the loss of planning flexibilities with the constraints imposed by rate stabilization, field activities are forced to improve their outyear budgetary planning. He stated that this has turned out to be a positive factor for the field activity and the Navy.

One comptroller commented that even with careful estimating based on reasonable assumptions, unknown variables cannot be predicted. He concluded that rates estimated 18 months in advance of budget execution will always be susceptible to inaccuracies. He added that the unanticipated variables will not always guarantee losses, although losses may be the most likely result. Another comptroller commented that the quality of estimates is "further degraded by

[Headquarters] tampering with them to 'compensate' for later developments (e.g., ceiling changes) based on their erroneous assumptions as to how we cope."

One respondent commented that the greater vulnerability of NIF RDT&E activities to economic fluctuations will lead to budget estimates that reflect the greater uncertainty.

On the question whether the activities expect to improve their rate determination techniques with experience, "unless and until Headquarters tampering stops."

On the effect of rate stabilization on budget execution, one comptroller commented:

One of the most serious drawbacks of rate stabilization is that it undermines the ability to hold cost center managers responsible for the financial results of their organization's operations. It precludes the ability to adjust rates for unplanned developments such as organizational realignments, workload changes, and other unanticipated problems which arise during budget execution. The long lead time required to effect changes in the rate structure makes a mockery out of the principal that financial accountability should be aligned with organizational responsibility.

One comptroller attached an analysis of the budget submissions that his activity made for Fiscal Years 1978 and 1979, which highlights some of the problems experienced by his activity as a result of rate stabilization and other budget constraints. The problems occur when rate stabilization and the other constraints operate together. Some of the analysis is as follows:

The FY 79 budget allowance from OSD for labor cost escalation is 6.5 percent for graded employees and 3.4 percent for ungraded employees. Real labor cost rises faster than budget allowances from Headquarters. Allowances recognize Congressional pay raises, but not changes in pay rate structure due to periodic

and quality step increases....Given frozen employment, and therefore, no opportunity to restructure the grade composition of the direct labor force, rate stabilization policy becomes a policy of permanent loss to NIF....

FY 78 budgeted manyears exceed the A-11 control... and FY 79 budgeted manyears exceed the assigned control...If the real (activity) employment plan exceeds control manyears, the result again is budget distortion not to mention potential impact on operating results of an indeterminate amount... Manyears controls which are less than on-board employment produce a volume variance in operating results in the year of budget execution....In short, manyear controls coupled with rate stabilization in a period of marked personnel drawdown introduces destabilizing and unpredictable influences on NIF with a long term predilection for unrelieved loss. Ceiling constrains employment in the short run and rate stabilization provides a complementing long term employment constraint.

The analysis continues that the solution is to adjust the activity's budget to the manyear controls and then to make actual manyears for the year equal the adjusted budget and the manyears controls. The analysis continues to the following conclusion:

One focus of budget review should be total cost of operation. Preoccupation with rate change and the demotivation aspects of rate stabilization is dangerous. (The activity) will still be held accountable for the integrity of its NIF account and producing the results of its budgets. Rate management is no longer a tool available to local management. This leaves cost management, i.e., controlling the underlying cost structure...both the present cost of that structure and the stream of future costs that structure produces just by existing.

The "underlying cost structure" was defined by the activity to be civilian manpower, space and facilities, tools, energy requirements and the management organization.

c. Cost Center and Project Managers

One respondent stated that he feels that rate stabilization has taken away some of the incentives of cost center managers and project managers to "deal with cost head on." He stated that "good" cost center managers had no problems prior to stabilized rates. He continued that the efficiency of the good managers has been diluted by the inefficiencies of the "not-so-effective" cost center managers under rate stabilization.

Another respondent commented that one of the strong incentives for management is fiscal responsibility. He continued: "While I still feel conscious of cost, it is frustrating to know that it is viewed so weakly at the NAVCOMPT or higher level. The fact that making a predicted loss becomes a goal is almost unfathomable."

One respondent stated that any factors decided or controlled by higher command levels have a psychological impact upon local managers. He continued that "this is what managers are paid for--the ability to adjust to changing policy and still make it work."

One respondent stated that rate stabilization in itself imposes a significant constraint on local management. He continued that when added to other constraints such as ceiling limitation, services contracting limitations, high grade controls, and so forth, rate stabilization "levies a burdensome problem on local NIF management." Other respondents stated that management's inflexibility in reorganizing and effecting appropriate rate changes to meet major changes in program levels

and configurations is neither cost nor production effective.

Another respondent had the opposite response from the above. He stated that the statement about inflexibility "is an excuse for financial planners/managers, etc., not properly planning and doing their job."

One cost center manager stated that he had to operate under three constraints. One is the budget submitted almost two years in advance which assumed zero effect on the activity profit and loss, and which led to a stabilized rate. The second is a "profit goal" set by the activity for the cost center, sometimes at short notice, to preserve the activity's working capital. The third are rules, local and global, on what is a direct and what an indirect cost. He concludes:

This is an overspecified system! Only two of the goals can be met simultaneously! If fixed rates are continued (constraint 1) and the NIF corpus is to be preserved (constraint 2), then I must be allowed flexibility on deciding what is a direct charge (i.e., drop constraint 3).

Almost one-fourth of the respondents believe that rate stabilization does help. One stated that stabilized rates are a potential advantage for the laboratory in that they facilitate planning and eliminate fluctuations in costs. He continued that fluctuating costs had previously been a problem in terms of accruing large costs per manhour during the latter phase of the fiscal year. Another respondent commented that the only benefit he could perceive is the simplification of the preparation of labor cost estimates. By dealing exclusively with manhours, it is possible to determine

total cost without regard to the sub-cost centers involved in the project. Another respondent stated that the elimination of the variable labor cost per manhour makes it easier to plan and manage total resources and workload. Another stated that it is useful to know in advance what rates will be in use throughout the fiscal year. Another commented that the better method of planning and estimating labor costs is vital to the justification of budgets to customers and to Congress.

Some respondents who said that rate stabilization will not help made comments. One argued that the activities planned as well with actual costs. He stated that, in the past, average rates were generally used at his activity for project estimation and these probably produced cost estimates just as accurate as the stabilized rate system. Another respondent felt that stabilized rates had introduced a factor of error in budgeting and that the customer does not usually pay for the value he receives, but pays for more or less than he gets because of rate variances.

Several comments were made about the communication process between activities and customers. One respondent commented that stabilized rates improve communications and relationships because they have a smoothing effect on costs by eliminating escalating costs in the last quarter of a given fiscal year. Another commented, on the other hand, that communications are not improved because the customers believe that the rates are set high as a "pad."

On whether customers would apply pressure on activities to assign the more highly paid personnel to their

particular project, one respondent stated that, "with any billing scheme the sponsor pressures for the most productive people; productivity is not well correlated with price!" Another respondent amplified his response, stating that, "Although program managers have not yet exerted influence on personnel assigned to programs, I feel they will--at least those who begin to understand rate stabilization."

C. RESPONSES TO QUESTIONS UNIQUE TO CUSTOMERS OF NIF RDT&E ACTIVITIES

1. Presentation of Questionnaire Responses

Table II contains the percentage distributions of NIF RDT&E activity customers' responses.

In addition to the responses presented in Table II, two responses which did not fit the format of Table II are presented below.

1. How do you learn what a NIF RDT&E activity's stabilized rates are?

- | | |
|--|-------|
| a. Receive a letter from the activity | 16.3% |
| b. Learn them through conversation with contacts at the activity | 57.1% |
| c. Other methods | 26.6% |

2. What effect has stabilized rates had on your relationships and communications with your contacts at NIF RDT&E activities?

- | | |
|--|-------|
| a. Improved relations and communications | 8.0% |
| b. Little or no effect | 74.0% |
| c. Caused problems | 14.0% |
| d. Other (or no answer) | 4.0% |

Table II. NIF RDT&E Activity Customer Responses

| Question/Statement | * No. | Percentage of Responses** | | | |
|--|----------|---------------------------|------|------|----------|
| | | SA | A | D | DK |
| 1. Stabilized rates are a useful planning aid for you, the customers of NIF RDT&E activities. Knowing the stabilized rates of an activity enables you to know in advance how many hours of effort your dollars will buy. | 52 | 5.8 | 61.5 | 19.2 | 3.8 9.6 |
| 2. Even though you know how many hours of effort you can buy, you do not know how many hours of effort will be required to achieve a solution to the research problem. | 51 | 29.4 | 58.8 | 5.9 | 3.9 2.0 |
| 3. You receive the activity rates early enough to use them in your planning and budgeting process. | 52 | 0.0 | 26.9 | 44.2 | 9.6 19.2 |
| 4. Rate stabilization has provided you with more information to use in planning and budgeting. | 51 | 0.0 | 13.7 | 64.7 | 5.9 15.7 |
| 5. Stabilized rates of NIF RDT&E activities are useful when you are developing plans for the out-years, that is, years beyond the budget year. | 51 | 2.0 | 47.1 | 31.4 | 5.9 13.7 |
| 6. The multiple rates (at least one rate for each cost center at each activity) cause some confusion. You need to know which cost center at which activity will perform the work on your project in order to know what rate you will be charged. | 52 | 3.8 | 69.2 | 17.3 | 0.0 9.6 |

*No. = Number of responses

**SA = Strongly Agree

A = Agree

** D = Disagree

SD = Strongly Disagree

DK = Don't Know

2. Summary of Amplifying Comments

One customer commented: "This paper was my introduction to the topic 'Rate Stabilization.'" Another stated that he had never received any rates, let alone any stabilized rates. He continued that his office never uses rates in forecasting. He stated: "R&D activity funding is achieved by informal liaison and mid-year program reviews. We do not negotiate manhours or rates, but rather fund estimated costs of total work efforts."

Another customer commented that he really does not care how many hours of effort his dollars will buy, although it is interesting. He stated: "I'm sure rate stabilization helps the manager at the NIF activity--but to a buyer of NIF activity services it is little more than 'interesting' data." Another customer stated that stabilized rates are a useful "yardstick" to give an idea of approximately how much it will cost to have work performed by an activity.

Three customers commented that rates generally are not known. Two of them stated that rates are known only when specifically requested, or in conjunction with the review of the activity's work plan. Another of the three stated that even if the rates were known "it would make little difference since the unique capabilities in our line of R&D do not allow 'shopping around' for the lowest rates." One customer stated that he learns activity rates from the systems command financial branch. Another stated that rate information is obtained from the Headquarters group in charge of managing the particular

activity. One customer commented that rates are not as available as they were prior to rate stabilization:

Official rates are not readily obtainable for use in budgeting. In the past, we could contact the NIF activity and receive authoritative and generally dependable out-year budget rates for use on our project budget development. Now, the activities inform us that they have developed their proposed out-year rates, but that these rates have been constrained by specific allowable percentages for per diem pay increases, inflation, etc., and that the rates are subject to an "adjustment" at the headquarters level to compensate for past losses in the category to which they are assigned.

Almost all respondents agreed that stabilized rates fix only one of the important variables facing customers of NIF activities when they are preparing budgets. Most responded that they do not know how many hours of effort will be required to solve their project. One customer, however, commented that he would not be a good R&D manager if he could not predict how much effort would be required to solve his research problem.

On the question concerning usefulness of stabilized rates for long range planning, one customer commented that since rates are adjusted each year and do not remain constant from year to year, their usefulness in long-range planning is minimal. He continued to say that rates have varied from year to year by as much as 10 percent. Another stated that rate stabilization removes the reluctance to project cost of a task for 12 or more months.

One customer stated in his response to the questionnaire that he had not been plagued with the unpredictable escalating rate problem that rate stabilization was intended to solve. On the contrary, he perceives the stabilized rate

as an adverse impact on his projects. He stated:

As a result of a careful review of their operations by the end of the second quarter of the fiscal year, we frequently were informed of small rate reductions which would allow us to recoup funds for other purposes or to do additional work on the original programs. These rate reductions resulted from operating efficiencies at the NIF activity and were passed along to their sponsors. Now, if the activity sees that they will end the year with increased retained earnings, they continue to operate with their frozen rates, and the additional funding is lost from the program. While it is true that this scenario would protect us from activities that would raise the rates during the year, we find that protection not necessary or desired....

Customers were not asked questions concerning gains and losses at NIF RDT&E activities or the uniform adjustment for those gains and losses. However, one customer did comment, as follows:

We are also told that the excess funding which is generated during the year from our project funds is held in the activity's retained earnings for two or three years until the redistribution of these funds among all NIF activities in their category can be effected. From a sponsor point of view, this is not a desirable situation. It is not difficult to become concerned about the fact that surplus project funds (due to over-applied rate schedules), which would have been recovered under the old system, will be held for many months and then probably turned over to some other NIF activity (whose sponsors received a "bargain" rate in previous years) as a fiscal rebalancing action.

Customers expressed disfavor of the averaging of labor rates. One stated that it seems "ridiculous to charge clerical labor within a cost center at the same rates as technical and engineering labor." Another stated that there should be standard rates, but that they should be more "sensitive to actual costs, i.e., several grades of engineer/technicians." One customer stated his perception as follows:

Average manhour costs mask program labor worth. Prior to the stabilized rate program, we were charged the actual cost of doing business with the field activities. Now, when a task involving relatively low-cost technician or drafting level effort is sent to the activity, we are billed at the stabilized rate for that cost center. This rate...will usually inflate the cost of a low technical task and deflate the cost of a very highly technical task....This is perceived to be another factor in the desensitization of the buyer and seller with respect to effective fiscal management.

Another customer was not overly concerned about the average labor rates. He stated that variations in the abilities of individuals far outweigh any effects of variation of stabilized rates.

One customer commented that he does apply pressure on activities on the assignment of personnel:

you pay the same rate whether you've got top (high grade) people or secretaries working--this buyer, at least, keeps pressure on the activity to minimize low priced help on his job. Interesting effect--competition for high priced help.

3. Writer's Comment on Proliferation of Rates

Three NIF RDT&E activities are using multiple rates per cost center. Another established multiple rates to be effective in Fiscal Year 1979. They do so in order to minimize variances on individual projects and for the activity as a whole. Some customers commented that they favor multiple rates per cost center to minimize variances.

Responses to one of the questions in Table II indicate that the multiple rates are confusing to customers when they try to use them in preparing budgets. The usefulness of stabilized rates may decrease because of the complex process of

first determining which cost center or cost centers will participate on the customer's project, and then determining how many personnel at each grade level or within each group of grade levels will work on the project. This complex process can be appreciated by seeing how many rates the NIF RDT&E activities published for Fiscal Years 1978 and 1979 as shown in Table III.

D. RESPONSES TO QUESTIONS COMMON TO BOTH ACTIVITY FINANCIAL MANAGERS AND CUSTOMERS

1. Presentation of Responses to Questions

Two questionnaire statements were common to all respondents.

1. The stabilized rate(s) for a cost center at a NIF RDT&E activity fix(es) only one of two important variables in R&D planning. That is, it fixes the price or rate per unit of effort, whereas the predominant variables, scope of work and manning levels, are still left to educated estimates.

| Responses: | Cmdrs & TechDrs | Compts | CostCntr& ProjMgrs | Customers |
|-------------------|--------------------|--------|-----------------------|-----------|
| Strongly Agree | 59.1% | 30.8% | 26.1% | 42.3% |
| Agree | 36.4% | 61.5% | 69.6% | 55.8% |
| Disagree | 0.0% | 7.7% | 0.0% | 1.9% |
| Strongly Disagree | 4.5% | 0.0% | 4.3% | 0.0% |
| Don't Know | 0.0% | 0.0% | 0.0% | 0.0% |
| No. of Responses | 22 | 13 | 46 | 52 |

2. After over a year of experience with rate stabilization at NIF RDT&E activities, your opinion is that rate stabilization:

| Responses: | Cmdrs & TechDrs | Compts | CostCntr& ProjMgrs | Customers |
|-------------------------------------|--------------------|--------|-----------------------|-----------|
| Should be retained as is | 4.8% | 8.3% | 19.0% | 13.6% |
| Should be retained, but modified | 9.5% | 16.7% | 14.3% | 9.1% |
| Should be abandoned | 76.2% | 75.0% | 66.7% | 13.6% |
| Undecided | 9.5% | 0.0% | 0.0% | 63.7% |
| No. of responses | 21 | 12 | 42 | 44 |

Table III. Summary of Fiscal Years 1978 and 1979 Stabilized Rate Schedules for the NIF RDT&E Activities

| <u>Activity</u> | <u>Number of Cost Centers</u> | | <u>Number of Rates Per Cost Center</u> | | <u>Total Number of Rates</u> | |
|-----------------|-------------------------------|-------------|--|-------------|------------------------------|-------------|
| | <u>1978</u> | <u>1979</u> | <u>1978</u> | <u>1979</u> | <u>1978</u> | <u>1979</u> |
| CEL | 14 | 14 | 1 | 1 | 14 | 14 |
| DTNSRDC | 20 | 17 | 1 - 5 | 1 - 5 | 76 | 68 |
| NADC | 5 | 6 | 17 | 17 | 85 | 102 |
| NAEC | 7 | 7 | 1 | 1 | 7 | 7 |
| NAPC | 5 | 5 | 1 | 1 | 5 | 5 |
| NATC | 21 | 21 | 1 | 1 | 21 | 21 |
| NCSL | 15 | 16 | 1 | 1 | 15 | 16 |
| NOSC* | 73 | 44 | 1 | 1 | 73 | 44 |
| NRL@ | NA | NA | NA | NA | 236 | 236 |
| NSWC | 14 | 13 | 1 | 1 | 14 | 13 |
| NUSC# | 38 | 48 | 1 | 1 - 2 | 38 | 50 |
| NWC¢ | 20 | 13 | 1 | 5 | 20 | 65 |
| PMTc | 30 | 28 | 1 | 1 | 30 | 28 |

* NUC and NELC combined for Fiscal Year 1978.

@ NRL does not establish rates by cost center. Rates are established by pay level in the general schedule and in the wage schedules for straight time and for overtime. In addition to the above rates, NRL has seven rates for technical information services, 25 rates for printing services, 23 rates for reproduction services, 153 rates for photographic services, and about 35 rates for computer services.

In addition to the above rates, NUSC published 13 rates for computer services.

¢ In addition to the above rates, NWC has two rates for drone presentations, 9 rates for aircraft flight hours, 13 rates for computer services, and about 159 rates for photographic laboratory services. NWC did not publish the rates for photographic services in FY 1979.

2. Summary of Amplifying Comments

All the amplifying comments presented below apply to the second question.

a. Commander/Technical Director Comments

One respondent commented that stabilized rates should be retained but modified to make each activity responsible for its own gains and losses. He stated that this would provide a "built-in" incentive to develop additional sophistication in planning and budgeting. He continued that also additional flexibility should be permitted to allow local adjustment of rates.

Another respondent commented that rate stabilization ought to be modified to allow local commanders to change rates plus or minus 15 percent without consulting higher headquarters. Another stated that a modification should be made to allow activities to fix their rates just prior to the beginning of the fiscal year.

Several respondents who favored abandoning rate stabilization made these comments. One stated: "I strongly believe that 'stabilized rates' has no place in R&D. A quick look at history will show that none of the R&D NIF activities were guilty of the crimes which stabilized rates were designed to fix."

Another stated that he could understand imposition of stabilized rates on a production oriented activity such as a Naval shipyard with a few dedicated customers who have extreme financial planning difficulties. He stated that

stabilized rates greatly ease overhaul and repair planning. But he continued that he sees no benefit to the R&D customer or performing activity, and that the system imposes "severe planning and execution difficulties to activity managers." Another respondent continued that there are so many variables such as ceiling cuts, deferrals, changing emphasis, and personnel controls that it is "well nigh impossible to make reasonable rate estimates 18 months in advance."

Another respondent stated that the concept of stabilized rates, as now implemented, has several bad features and is considered a significant step backwards for NIF activities. He listed four "bad features" as follows:

1. The cost of work charged the customer no longer reflects the cost of doing the work.
2. Many of the incentives for good management have been removed in that the reward for applying innovative management is to have the profit transferred to a laboratory that lost money.
3. The cost center manager has greater difficulty relating to his cost center budget and plan since he feels that he has little impact in putting it together.
4. The commanding officer will never have to live with any budget he submits since most have two-year terms. The budget he has to live with was submitted by his predecessor. Therefore he may not make the hard decisions necessary to break even for someone else's budget.

b. Comptroller Comments

One comptroller commented that rate stabilization has more plus factors than negative, although many of the plus factors are at the systems command and higher levels. Another stated that rate stabilization is not bad and that it has some useful aspects. But he added that it really does not fit the R&D community.

One comptroller commented that the basic concepts of rate stabilization are beneficial but that two areas need to be modified to increase acceptance of the concept. They are:

1. Make each activity responsible for setting its own stabilized rates and living with its own profit and loss.
2. Allow the activities a limited amount of flexibility to change rates during the execution fiscal year. This could be accomplished by a small plus/minus percentage adjustment that would "fine tune" the budget.

Another comptroller suggested modifications to allow establishment of stabilized rates for the next fiscal year late in the current fiscal year. Another modification is to allow changes in rates during a fiscal year in those circumstances in which an activity has conducted a re-organization that required the approval of the Naval Material Command.

Another comptroller commented that "if rate stabilization must continue" a modification which would allow each activity to change the rates within an allowable percentage, "say 10%, 3 months before the start of the fiscal year" should be considered.

c. Cost Center/Project Manager Comments

One respondent feels that "rate stabilization, if used properly, is an excellent planning tool for managers and does simplify preparation of budget estimates for customer appropriations."

Another respondent suggested a modification to allow updates of rates at the beginning of the fiscal year to compensate for changes that occur within the period between the time the rates are set and they are charged. Another recommended that the stabilized rate be adjusted on a semi-annual basis to take into account changes in the average base pay, indirect and general overhead rates.

Another respondent stated that his first preference is to abandon rate stabilization. But he commented that, if it is continued, he recommends more flexibility to change rates, preferably during the fiscal year but at least at the beginning of the fiscal year.

d. Customer Comments

One customer stated: "Keep it if it helps the activity. It's immaterial from this user's point of view." Another customer stated that rate stabilization is of value to him in the stage of project execution rather than planning. He continued that rates are too late to be of any significant benefit in planning.

Another customer stated that it is his understanding that stabilized rates allow for inflationary adjustments to his projects, and that in that sense, they are valuable and should be retained.

One customer suggested that stabilized rates at R&D activities be more widely publicized.

Three customers made amplifying comments supporting abandonment of rate stabilization. One views stabilized rates "with less than a measure of joy" since he pays the same rate whether a high-grade person or a secretary works on his project. Another states that stabilized rates makes private industry more competitive with the Navy labs in that industry can quote lower rates for support work such as clerical work and graphics. He added that direct cost analysis for the customer is more difficult with stabilized rates. A third customer provided an interesting comment:

All in all, it appears that...we are being given a mandatory cure for a disease that we didn't have. We would much prefer to pay a fair price for goods and services rendered and restore full incentives to the NIF activities for real time, effective fiscal management using the individual performances on each project and the activity year-end retained earnings as the activities' "report card." If an activity established a pattern of fiscal irresponsibility and unpredictable rate increases, we would recommend activity management sanctions or management changes rather than an across-the-board "tax" to ease the pain for the offending activity.

E. NAVY HEADQUARTERS FINANCIAL MANAGER COMMENTS

During interviews of Navy headquarters financial managers, comments concerning two aspects of rate stabilization were made that are pertinent to this thesis.

1. Impact of the Timing of Establishment of Stabilized Rates

Discussions with managers in the offices of the Director of Laboratory Programs, the Assistant Secretary of the

Navy for Research and Development, and the Comptroller of the Navy all questioned the timing of stabilized rates. The question was whether customers receive stabilized rates from NIF RDT&E activities early enough in the budget cycle to use them. Responses to the customer questionnaires confirmed that rates are generally received too late to be of use.

Discussions with the Special Assistant for Financial Management in the office of ASN(R&D), [Ref. 35], and with an analyst in the Operations Division of the Office of Budget and Reports in the Office of the Comptroller of the Navy, [Ref. 36], clarified the timing problem. The customers of the NIF RDT&E activities began preparing their Fiscal Year 1979 budgets in April or May of 1977. Their budgets were "locked in" in August 1977, but the NIF RDT&E activities did not publish their rates until late September (or later). The budget was forwarded to the Office of the Secretary of Defense in early October. It appears, therefore, that the customers have completed their budgeting process when the rates are published by the NIF RDT&E activities. If they use the activity rates in budgeting, they must obtain them in informal contacts with personnel at the activities. If so, these rates likely are tentative and subject to adjustment.

2. Stabilization of Overhead Rates

Two out of three NIF RDT&E activities responded that they do not adjust overhead rates during the fiscal year. They perceive that overhead rates, as well as billing rates,

are stabilized for the entire fiscal year. This perception has led to comments made by activity financial managers that more flexibility is needed to adjust rates in case of a major reorganization.

During the interview with financial managers in the NIF Systems Branch of the Navy Comptroller Office, [Ref. 33], the point was made that some NIF RDT&E activities have the "misunderstanding" that overhead rates are fixed for the full fiscal year. According to these personnel, there is no requirement to hold overhead rates stable during the fiscal year. Only the stabilized billing rates must be kept fixed.

F. FINANCIAL IMPACT OF RATE STABILIZATION IN FISCAL YEAR 1977

1. Gains and Losses Experienced in Fiscal Year 1977

a. Activity Group

The composite financial information for Fiscal Year 1977 for the 13 NIF RDT&E activities was obtained from the Navy Comptroller's NIF Reporting System data bank. Summary data is presented in Table IV, and additional data appears in Appendix B.

The \$12.8 million profit resulted from five basic types of variances. These are shown in Table V and in Appendix B.

Table V shows that of the \$12.8 million profit, \$3.0 million (23.4 percent) was attributed to rate stabilization variances and \$10.9 million (85.1 percent) was attributed to over-applied general overhead expense. For Fiscal

Table IV. Composite Financial Information for Thirteen
NIF RDT&E Activities for Fiscal Year 1977

| | <u>Millions of Dollars</u> | <u>Percent</u> |
|--|--------------------------------|----------------|
| Total Revenue | \$ 1,717.3 | 100.0 |
| Cost of Services Provided | 1,704.5 | 99.3 |
| Net Operating Results: Profit(Loss) | \$ 12.8 | 0.7 |

Source: Navy Comptroller NIF Reporting System.

Table V. Analysis of Net Operating Results at Thirteen
NIF RDT&E Activities for Fiscal Year 1977

| | <u>Millions of Dollars</u> | <u>Percent</u> |
|--|--------------------------------|----------------|
| Net Operating Results: Profit(Loss) | \$ 12.8 | 100.0 |
| Production Expense Profit(Loss) | (1.5) | -11.7 |
| General Expense Profit(Loss) | 10.9 | 85.1 |
| Stabilized Rate Profit(Loss) | 3.0 | 23.4 |
| Other Variances Profit(Loss) | (.4) | - 3.1 |
| Direct Adjustments | .8 | 6.3 |

Source: Navy Comptroller NIF Reporting System.

Year 1977, therefore, the old and familiar over- under-applied overhead was the cause of most of the total profit.

b. Individual Activities

Similar financial information for the 13 individual NIF RDT&E activities is presented in Appendix B. At four of the activities, the stabilized rate variance was a major portion (over 50 percent) of the total profit or loss experienced. For the other nine, the stabilized rate variance resulted in less variance than did the over- under-applied. This is not to imply that stabilized rates will continue to play a relatively minor role in total variance between actual revenue and actual costs.

c. Possible Understatement of Stabilized Rate Variances

Analysis of the methods of accounting for stabilized rates shows that stabilized rate variances occur "on top" of all other variances. Stabilized rate variance is the difference between actual direct labor costs plus applied production and general overhead and billed direct labor and overhead based on the rate. If activities are allowed to adjust overhead rates during the fiscal year, then more of the total gains or losses are likely to be reported as stabilized rate variances. An example may clarify:

| | <u>With Overhead Rates Fixed</u> | <u>With Overhead Variances Min- imized By Adjust- ment of Rates</u> |
|-------------------------------|--------------------------------------|---|
| Actual Overhead costs: | \$10,000 | \$10,000 |
| Applied Overhead | <u>9,000</u> | <u>9,700</u> |
| Under-applied Overhead | \$ 1,000 | \$ 300 |
| Actual Direct Labor Costs | \$ 9,000 | \$ 9,000 |
| Applied Overhead | <u>9,000</u> | <u>9,700</u> |
| Total Direct Costs | 18,000 | 18,700 |
| Stabilized Rate Billings | <u>17,500</u> | <u>17,500</u> |
| Stabilized Rate Variance | \$ <u>500</u> | \$ <u>1,200</u> |

Nine activities adjust overhead rates during the fiscal year, and four do not. According to personnel in the Office of the Comptroller of the Navy in an interview [Ref. 33], overhead rates may be adjusted during the fiscal year even though stabilized billing rates must be held fixed. If all thirteen activities had adjusted overhead rates during Fiscal Year 1977, and if these adjustments had minimized the over-application of general overhead, more of the total gain would have been reported as stabilized rate variance. The possible reporting of what may properly be stabilized rate variance as applied overhead variance may be concealing the actual impact of rate stabilization.

2. Impact of Fiscal Year 1977 Variances on Fiscal Year 1979 Budgeted Stabilized Rates

In a memorandum to the laboratories under the management of the Director of Laboratory Programs [Ref. 42], the activities were instructed to budget for no gains or losses

in Fiscal Year 1979 except for the recoupment of Fiscal Year 1977 and 1978 losses in the amount of about 30 cents per direct labor hour on all direct work performed (including overtime) in Fiscal Year 1979. The lowest rates published by the NIF RDT&E activities for which rates are available averaged about \$20 and the highest rates averaged about \$40. Therefore, the 30 cent adjustment to the rates was from 0.7 percent to 1.5 percent of the rates that were otherwise determined by the activities. The local activity managers, therefore, were in control of the determination of 98 to 99 percent of their stabilized rates.

G. ANALYSIS TO TWO METHODS OF ESTABLISHING RATES

The financial impact of the use of stabilized rates to bill customers for work performed on their projects depends upon the method used to establish the stabilized rates. Two basic methods were used by the 13 NIF RDT&E activities in Fiscal Year 1977 to establish stabilized rates.

1. Multiple Rates for Each Cost Center

In Fiscal Year 1977, three of the thirteen NIF RDT&E activities used more than one rate per cost center. Two of the three used essentially a rate for each pay level of personnel within each cost center. The other one used a rate for a group of pay levels, for example, pay level GS-1 through GS-5, within each cost center. Each stabilized billing rate consisted of the average direct labor cost per manhour (or

per manday) for the pay level or group of pay levels, plus the estimated production and general overhead per manhour (or manday) for the cost center.

2. Single Rate for Each Cost Center

The other ten NIF RDT&E activities used a single rate per cost center in Fiscal Year 1977. One of them is converting to multiple rates per cost center in Fiscal Year 1979 [Ref. 34]. The single rate consists of the average direct labor cost per manhour or manday for the cost center plus the production and general overhead per manhour or manday for the cost center.

3. Differences Between Impacts of the Two Methods

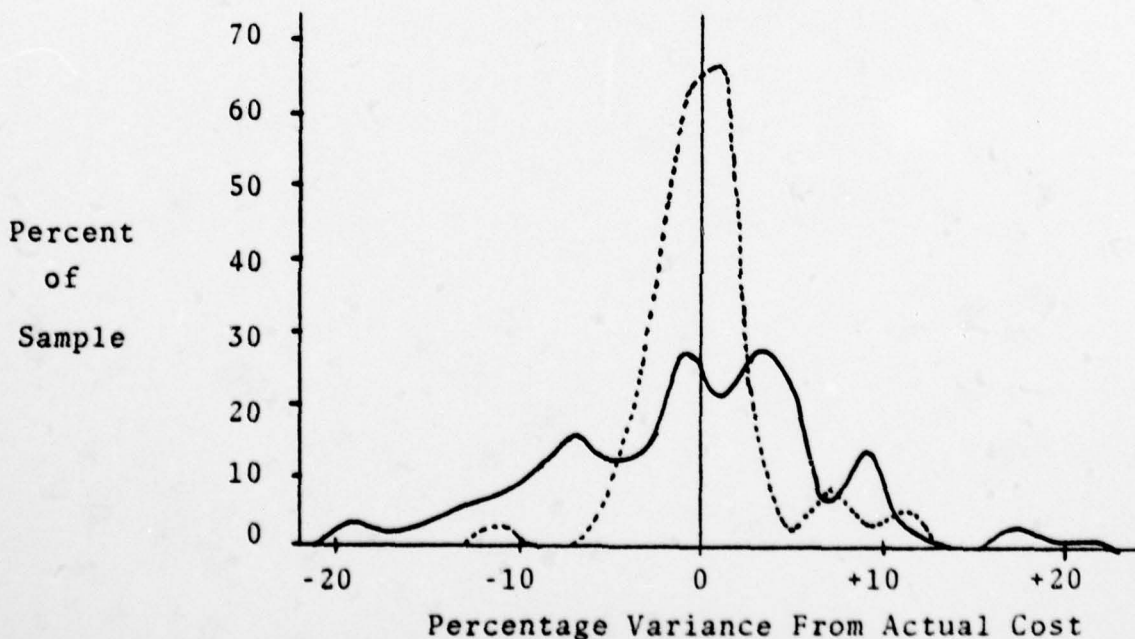
Variances on individual customer projects for a representative activity using multiple rates and for a representative activity using a single rate are tested using statistical samples at two activities. Samples were selected from Fiscal Year 1977 reports that reported stabilized rate variances for individual customer projects. One sample was selected at the Naval Weapons Center (NWC), China Lake, California, which used one rate per cost center. The second sample was selected at the Naval Air Development Center (NADC), Warminster, Pennsylvania, which used fifteen rates per cost center. The two samples test two extremes since NADC uses essentially a rate for each grade level of personnel in each cost center. Both samples were selected to provide a reliability in estimates of percentage variances for individual

projects of plus or minus one percent. This reliability is obtained at the 90 percent confidence level.

As one might intuitively conclude, using multiple rates per cost center resulted in significantly smaller percentage variances. The distributions of the variances for both methods are displayed on a single graph in Figure 1. With both distributions on the same graph, the differences between the NADC and the NWC variances are easily visualized.

With multiple rates at NADC, the percentage variances for the sample ranged from -12 percent to +12 percent. The average positive variance (billing amount larger than cost amount) was 2.6 percent, and the average negative variance (billing amount less than cost amount) was 1.9 percent. The overall variance for the sample for NADC was +.26 percent, which compares closely to the overall variance on the listing from which the sample was selected of +.20 percent.

Figure 1. Distributions of Stabilized Rate Variances on Individual Customer Projects



With the single rate per cost center at NWC, the percentage variances ranged from -20 percent to +22 percent. The average positive variance was 5.2 percent and the average negative variance was 6.5 percent. The overall variance for the sample was -1.5 percent which compares closely to the overall variance of -1.42 percent on the listing from which the sample was selected.

Examination of Figure 1 leads to the conclusion that variances at NADC are significantly smaller than those at NWC (disregarding the signs). To confirm this conclusion statistically, a two-sample hypothesis test was performed. The null hypothesis was that there was no significant difference and the alternate hypothesis was that the NADC variances were significantly smaller. The test resulted in rejection of the null hypothesis at the 0.1 significance level. The statistical conclusion is that the NADC variances are significantly smaller than the NWC variances.

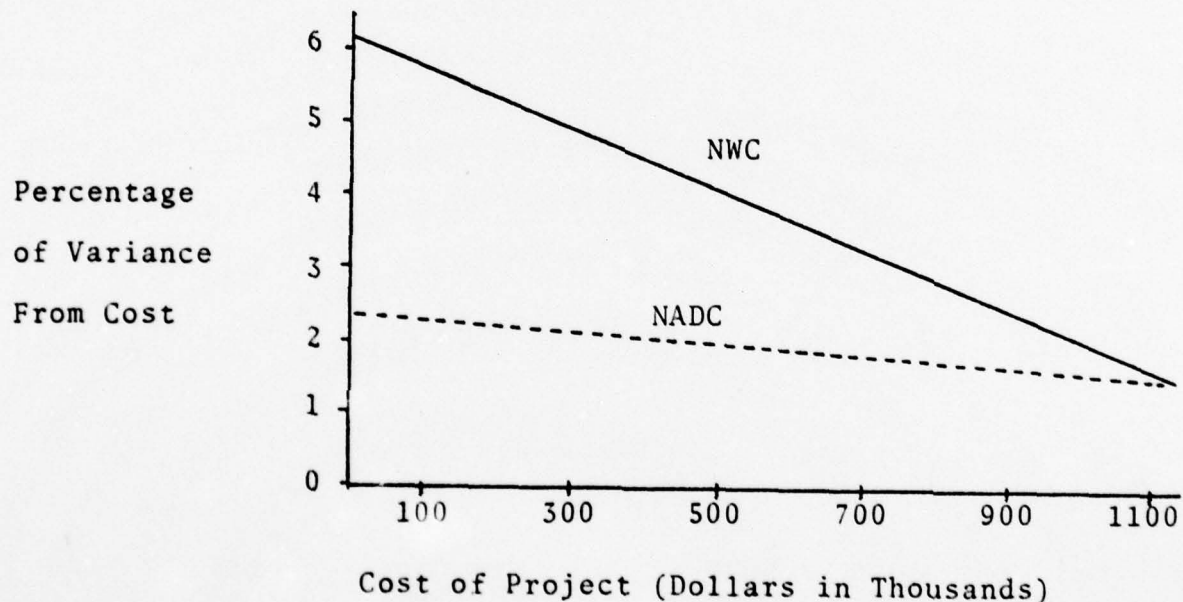
4. Degree of Impact with Respect to Size of Project

The earlier thesis, authored by Messrs. Kramer and Solberg, presented a hypothesis, based on interviews with comptrollers at NIF RDT&E Activities, that stabilized rates as a cost distorting factor will be significant only to programs which are small in terms of total manhours. The larger projects, it was hypothesized, utilize a wide enough range of talent that cost center average costs approximate the actual costs of work done. In other words, the

statistical effects of large samples govern [Ref. 3 p. 41 and p. 71].

In the current thesis, the above hypothesis is tested by making a correlation analysis of project size (in terms of total direct labor and overhead) and percentage of variance. The test was made for both NWC and NADC to determine what effect multiple rates per cost center would have on the correlations. The resulting regression lines are shown in Figure 2.

Figure 2. Correlation of Customer Project Cost and Percentage Stabilized Rate Variance



To test whether the correlation coefficient is significantly different from zero (horizontal line), a statistical "t-test" was applied to the correlation coefficients for the regression lines for both NADC and NWC. The results are that a significant negative correlation between project size and

percentage variance existed at NWC with the single rate per cost center. At NADC the correlation was negative but was not significantly different from zero. At NADC, the multiple rates per cost center equalized the percentage variances for large and small projects. To illustrate, small projects (\$50,000 each) at NADC experienced a 2.4 percent variance, while large projects (\$1.3 million each) experienced a 1.7 percent variance. The difference is not statistically significant. At NWC, the typical small project experienced about a six percent variance, while the typical large project experienced a one percent variance.

These correlations confirm the hypothesis made in the prior thesis as long as one rate is established for each cost center. But with multiple rates, the correlation is not significant and the hypothesis does not prove accurate.

V. SUMMARY OF FINDINGS

A. ADVANTAGES AND DISADVANTAGES OF RATE STABILIZATION

In 1976, the NIF RDT&E community opposed the implementation of rate stabilization at NIF RDT&E activities. They perceived few, if any, advantages to the RDT&E community from rate stabilization and perceived many disadvantages. The community also perceived that rate stabilization would not benefit their customers.

Responses to the questionnaires from the thirteen NIF RDT&E activities and from their customers reaffirm the perceptions of 1976. Whereas there are differing opinions on many points, activity commanders, technical directors, comptrollers, cost center managers, project managers, and customers point out more disadvantages of rate stabilization than advantages.

Only one of five cost center managers and project managers responded that rate stabilization should be retained as is. Less than one in ten comptrollers and less than one in twenty commanders and technical directors favored retaining rate stabilization as is. About two of ten customers favored retaining rate stabilization, while six of ten were "undecided."

In order to summarize the reasons for the predominant response that rate stabilization should not be retained as is, the advantages and disadvantages of rate stabilization for the NIF RDT&E activities and for their customers are presented

in Tables VI and VII. These advantages and disadvantages were addressed in responses to the questionnaires and in amplifying comments of the respondents. The percentages of respondents for each advantage or disadvantage indicate the relative importance of the advantage or disadvantage to the respondents.

Table VI reveals that NIF RDT&E activity managers perceive that there are more than twice as many disadvantages to rate stabilization as there are advantages. Furthermore, the percentages of respondents perceiving the disadvantages are greater than the percentages of respondents perceiving the advantages. This is why more than two-thirds of the respondents favored abandoning rate stabilization.

Whereas some activity managers felt that rate stabilization will improve budgeting and planning, most perceive no real advantages. The strongest responses against rate stabilization referred to the uniform adjustment of stabilized rates to offset gains and losses, and to the loss of local flexibility to adjust rates. Activity managers, at all levels, strongly feel that each activity should be solely and fully responsible for its gains and losses and for offsetting them. Many feel that this responsibility would increase the incentives of local managers to improve budgeting and cost control. Activity managers desire the ability to adjust stabilized rates by plus or minus 10 to 15 percent either during the fiscal year or shortly before (say three months) the beginning of the fiscal year.

Table VI. Advantages and Disadvantages of Rate Stabilization
to NIF RDT&E Activities

| | Percentage of Respondents | | |
|---|---------------------------|-------|--------------------|
| | Cmdr TechDir | Compt | CstCntr ProjMgr |
| A. ADVANTAGES | | | |
| 1. As activities gain experience with rate stabilization, they will improve rate determination and budgeting techniques. | | 69% | |
| 2. Rate stabilization provides information useful in control of cost center costs and in variance analysis and cost control for the activity. | | 42% | |
| 3. The 15 to 18 month lead time for developing rates will lead to the use of more analytical and refined planning and budgeting methods. | 23% | 38% | |
| 4. Stabilized rates provide useful information for planning, budgeting, and budget execution. | | 23% | 19% |
| 5. With the requirement to explain variances and with higher level management attention to gains and losses of activities, rate stabilization provides an incentive for better planning and cost control at NIF RDT&E activities. | | 9% | 23% |
| 6. Rate stabilization may lead to more emphasis on control of costs within budgets versus management and adjustment of rates. | | 8% | |
| B. DISADVANTAGES | | | |
| 1. Rate stabilization will increase the occurrence of gains and losses experienced by NIF RDT&E activities. | | 100% | |

Table VI. Advantages and Disadvantages of Rate Stabilization
to NIF RDT&E Activities

| | Percentage of Respondents | | |
|---|---------------------------|-------|--------------------|
| | Cmdr TechDir | Compt | CstCntr ProjMgr |
| B. DISADVANTAGES (Continued) | | | |
| 2. The flexibility of NIF RDT&E activity commanders to make the best possible decisions to accomplish the assigned mission of the activity is decreased. | 100% | | |
| 3. Rate stabilization adds to the shifting of management control from activities to higher level management levels. | 96% | 100% | 70% |
| 4. Stabilized rates take away the flexibility to adjust rates during the fiscal year in order to minimize gains and losses. | 100% | 92% | 92% |
| 5. The uniform adjustment of rates to offset prior year gains and losses removes incentives for NIF RDT&E managers to control costs and to break even. | 86% | | 85% |
| 6. Since stabilized rates are established as long as 15 to 18 months before the fiscal year, they are of questionable accuracy. | 86% | | 85% |
| 7. The preoccupation with having no gains or losses may detract from the pursuit of the basic mission and goals of the activity. | 77% | | |
| 8. The increases in gains and losses which may result from rate stabilization will be viewed as negative reflections on the commanders and controllers of the NIF RDT&E activities. | 77% | | 73% |

Table VI. Advantages and Disadvantages of Rate Stabilization
to NIF RDT&E Activities

| | Percentage of Respondents | | |
|---|---------------------------|-------|--------------------|
| | Cmdr TechDir | Compt | CstCntr ProjMgr |
| B. DISADVANTAGES (Continued) | | | |
| 9. The long budgeting lead time for developing stabilized rates increases NIF RDT&E activities' vulnerability to economic fluctuations. | | 77% | |
| 10. Rate stabilization may lead NIF RDT&E activity managers to increasingly conservative behavior and courses of action biased in favor of minimization of the probability of large gains and losses. | 64% | 54% | |
| 11. Stabilized rates developed as long as 15 to 18 months before the applicable fiscal year will guarantee operating losses, given conservative inflation factors and other budget constraints. | | 62% | |
| 12. Whereas NIF RDT&E activities must expend effort and expense developing and accounting for stabilized rates, they are of little or no use during budget execution. | | 58% | |
| 13. Rate stabilization has caused problems in relations and communications between activities and their customers. | | | 34% |
| 14. The average direct labor rates for cost centers for most activities may lead to customer pressures to assign the more highly paid personnel to their particular projects. | | | 21% |

Table VII. Advantages and Disadvantages of Rate Stabilization to Customers of the NIF RDT&E Activities

| | Percentage of Respondents | |
|--|---------------------------|--------------|
| | <u>Compt</u> | <u>Cust</u> |
| | ProjMgr | |
| | | CstCntr |
| A. ADVANTAGES | | |
| 1. Stabilized rates are useful to customers in determining the number of hours of effort that a specified budget amount will buy. | | 67% |
| 2. Stabilized rates are of some use to customers in long-range planning for years beyond the budget year. | | 49% |
| 3. Stabilized rates may serve as a protection from cost escalation since inflation can be built into customers' budgets. | | Cust Comment |
| B. DISADVANTAGES | | |
| 1. Stabilized rates are of limited use since they provide the answers to a relatively small part of the customers' budgeting problem. | 92% | 96% |
| 2. A customer's project funds may be "siphoned off" by the uniform adjustment process to pay for losses incurred by activities that did not work on his project. | | 88% |
| 3. Stabilized rates are of questionable accuracy. | | Cust Comment |
| 4. Although the proliferation of stabilized rates minimizes variances, it is a disadvantage to customers since it makes the determination of which rates to use for a particular project a complex task. | | 85% |
| | | 73% |

Table VII. Advantages and Disadvantages of Rate Stabilization
to Customers of the NIF RDT&E Activities
(Continued)

| | Percentage of Respondents | |
|--|------------------------------|----------------------------|
| | <u>Compt</u> | <u>ProjMgr</u> <u>Cust</u> |
| B. DISADVANTAGES (Continued) | | |
| 5. The averaging of direct labor billing rates results in distortions between billings and "true" costs on customer projects. | | Cust Comment |
| 6. Official rates are not as available for use in budgeting as they were prior to rate stabilization, and are often subject to adjustment by the activity group manager. | | Cust Comment |
| 7. Mid-year overhead rate adjustments, as often a benefit to customer projects as not, have disappeared. | | Cust Comment |

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The advantages and disadvantages addressed by customers are presented in Table VII.

Customers also perceived that rate stabilization involved more disadvantages than advantages for them. The usefulness of stabilized rates is limited, and the customers would prefer to be billed actual costs rather than stabilized rates. Some customers objected to the uniform adjustments of rates to offset gains and losses, the averaging of direct labor charges, and the loss of mid-year overhead rate adjustments which often benefit the projects. Many customers responded that they do not use rates in negotiating projects with NIF RDT&E activities and that rates are "interesting" but not very useful to them.

B. TRADEOFFS TO BE CONSIDERED IN RATE STABILIZATION

Managers are often faced with decisions involving tradeoffs. This was true in the implementation of rate stabilization, and likely will be true in decisions still to be made. Three tradeoffs that may be a part of future decisions concerning rate stabilization are as follows:

1. Longer Budget Leadtime Versus Less Vulnerability

Since many customers indicated that rates are not available when they need them in budgeting, the decision to have the NIF RDT&E activities establish rates earlier in the customers' budget cycle, more than 15 months before the fiscal year, may be considered. But the increased vulnerability of

the NIF RDT&E activities to economic upheavals that would result from the earlier development of rates must also be considered.

2. Minimization of Variances Versus Usefulness of Rates

The establishment of multiple rates per cost center minimizes stabilized rate variances. More activities may decide to establish multiple rates per cost center for this reason. However, proliferation of stabilized rates decreases their usefulness to customers. The process of deciding which rate applies to a particular project becomes more complex.

3. Uniform Adjustments to Offset Gains and Losses Versus Local Management Incentives

Perhaps this is the most important tradeoff to be considered. Uniform adjustments of stabilized rates of the individual activities in the activity group have the advantage of minimizing fluctuations of rates from year to year. This is true because the gains and losses of the individual activities tend to neutralize each other. However, making each activity solely and fully responsible for its gains and losses, and for offsetting them, would increase local management incentives. But this would also result in more dramatic fluctuations from year to year in each activity's rates.

These three tradeoffs may be at the center of some of the present and future controversies and decisions concerning rate stabilization.

VI. CONCLUSIONS

A. PERTAINING TO NIF RDT&E ACTIVITY MANAGERS

1. In the long run, rate stabilization will force improvement of NIF RDT&E activities' budget formulation techniques.

2. Rate stabilization provides an incentive for improved planning and cost control to a minority of activity managers.

3. The longer leadtime for developing rates, coupled with stabilization of those rates, increase the vulnerability of NIF RDT&E activities to economic fluctuations.

4. The long leadtime for developing stabilized rates, in conjunction with the dynamic nature of RDT&E planning and funding, make stabilized rates of NIF RDT&E activities of questionable accuracy.

5. The use of conservative inflation factors and other budget constraints, such as manyear and grade level controls, when coupled with stabilization of billing rates may produce operating losses for some NIF RDT&E activities.

6. Stabilization of billing rates may lead to increased emphasis on cost control at some NIF RDT&E activities.

7. Less than half the activity comptrollers use stabilized rates and variance information for cost control and variance analysis.

8. Clarification to NIF RDT&E activities that they can adjust overhead application rates during the fiscal year will dispel many of their adverse reactions to rate stabilization.

9. NIF RDT&E managers are biased in favor of actions which minimize the probability of large variances. The pre-occupation with breaking even may be a detraction from the pursuit of the basic mission and goals of the activity.

10. The uniform adjustment of NIF RDT&E activities' budgeted stabilized rates to offset gains and losses decreases the incentives of activity managers to budget accurately and control costs in order to minimize gains and losses.

11. Being solely and fully responsible for one's activity's gains and losses and for adjustments of billing rates to compensate for gains and losses is very important to NIF RDT&E activity commanders, technical directors, and comptrollers. Reconsideration of the uniform adjustment policy would eliminate much of the resistance to rate stabilization.

B. PERTAINING TO NIF RDT&E ACTIVITY CUSTOMERS

1. In general, customers do not use stabilized rates in their budgeting process. Several reasons may account for the nonuse:

a. Rates are not available early enough for meaningful use;

b. Rates are useful in determining how many manhours of effort the customer can buy for a specified amount but the customer must still make an educated estimate of how many manhours will be needed;

c. The proliferation of rates per activity, and in some cases per cost center, makes their use by customers complex if not impossible.

2. Rate stabilization has not improved communications and relationships between activities and their customers. Communications and relationships have been harmed for many of the respondents.

3. When customers learn that an average direct labor rate per manhour for each cost center is used by many NIF RDT&E activities for billing, some will pressure the activities to assign the more highly paid personnel to their projects.

4. Since a minority of customers of NIF RDT&E activities are using stabilized rates in planning, the overall objectives of rate stabilization are not being fulfilled in the RDT&E community. These objectives are to facilitate the customers' budgeting and planning and to allow budgeting for inflation by use of stabilized rates.

C. GENERAL

1. Establishing multiple rates per cost center, with rates established for pay levels or groups of pay levels, is desirable from the standpoint of minimization of variances on individual customer projects and for the NIF RDT&E activity.

2. Establishing multiple rates per cost center is undesirable from the standpoint that proliferation of rates makes their use in budget formulation by customers complex or impossible.

3. The total profit made by NIF RDT&E activities in Fiscal Year 1977 can be considered insignificant since it was 0.7 percent of total revenue.

4. Stabilized rate variances reported for Fiscal Year 1977 were a relatively minor portion of total reported profit.

5. The fact that some activities did not adjust overhead rates during Fiscal Year 1977 resulted in reporting as over- or under-applied overhead what may have been appropriately reported as stabilized rate variance. Therefore, the full financial impact of rate stabilization may have been concealed.

6. The uniform adjustment of Fiscal Year 1979 rates to offset Fiscal Year 1977 and projected Fiscal Year 1978 gains and losses was insignificant in that it averaged less than one percent of the rates.

D. ADDITIONAL THESES TOPICS

1. Further analysis of the advantages and disadvantages of the various methods of establishing stabilized rates, that is, a single rate per cost center or multiples rates per cost center, may be productive.

2. Exploration of the use of stabilized rate variance analysis in determining the causes of variances and recommending corrective actions might prove useful. Exploration of the applicability of classic variance analysis, which breaks variances down into volume variance and rate variance, could result in development of useful analysis techniques for use by NIF RDT&E and other activities.

3. Further analysis of the reasons why customers do not use stabilized rates could lead to recommendations that would increase the use of the rates. This analysis could explore the timing of publication of stabilized rates relative to the customers' budget cycle and could analyze the impact of proliferation of stabilized rates.

APPENDIX A

LIST OF NIF RDT&E ACTIVITIES

Naval Material Command Activities:

| | |
|---|-------|
| David W. Taylor Naval Ship Research and Development Center Bethesda, MD 20084 | NSRDC |
| Naval Air Development Center Warminster, PA 18974 | NADC |
| Naval Coastal Systems Laboratory Panama City, FL 32401 | NCSL |
| Naval Ocean Systems Center San Diego, CA 92152 | NOSC |
| Naval Surface Weapons Center Dahlgren, VA 22448 | NSWC |
| Naval Underwater Systems Center Newport, RI 02840 | NUSC |
| Naval Weapons Center China Lake, CA 93555 | NWC |

Naval Air Systems Command Activities:

| | |
|---|-------|
| Naval Air Engineering Center Lakehurst, NJ 08733 | NAEC |
| Naval Air Propulsion Test Center Trenton, NJ 08628 | NAPTC |
| Naval Air Test Center Patuxent River, MD 20670 | NATC |
| Pacific Missile Test Center Point Mugu, CA 93042 | PMTC |

Office of Naval Research Activity:

| | |
|---|-----|
| Naval Research Laboratory Washington, DC 20375 | NRL |
|---|-----|

Naval Facilities Engineering Command Activity:

| | |
|---|------|
| Civil Engineering Laboratory Naval Construction Battalion Center Port Hueneme, CA 93043 | NCEL |
|---|------|

APPENDIX B

NIF RDT&E ACTIVITIES FINANCIAL INFORMATION FOR FISCAL YEAR 1977 (DOLLARS IN THOUSANDS)

| | NADC | NSWC | NSRDC | NCSL | NWC | NUSC | NOSC |
|----------------------------|---------|---------|---------|--------|---------|---------|---------|
| TOTAL REVENUE | 161,827 | 245,818 | 122,614 | 34,783 | 210,358 | 189,619 | 193,519 |
| COSTS OF SERVICES PROVIDED | 157,660 | 242,617 | 121,886 | 33,658 | 209,075 | 183,297 | 195,394 |
| NET OPERATING RESULTS | 4,167 | 3,202 | 728 | 1,125 | 1,282 | 6,322 | -1,875 |

ANALYSIS OF NET OPERATING RESULTS

| | | | | | | | |
|------------------------------|-------|-------|--------|-------|--------|-------|--------|
| PROD EXP PROFIT/LOSS(-) | - 358 | 1,849 | -2,917 | 70 | 536 | 702 | -1,016 |
| GENL EXP PROFIT/LOSS(-) | 4,344 | 1,670 | 4,098 | -564 | 2,087 | 1,613 | 708 |
| FIXED PRICE PROFIT/LOSS(-) | 0 | 0 | 0 | 0 | 1 | 0 | 0 |
| OTHER VAR PROFIT/LOSS(-) | 0 | 40 | 0 | -28 | -41 | -287 | 32 |
| STABLZ RATE VAR PROF/LOSS(-) | 180 | -358 | -454 | 1,647 | -1,229 | 4,295 | -1,600 |
| DIRECT ADJUSTMENTS | 0 | 0 | 0 | 0 | -72 | 0 | 0 |
| NET OPERATING RESULTS | 4,167 | 3,202 | 728 | 1,125 | 1,282 | 6,322 | -1,875 |

PROFIT/LOSS AS PERCENT OF REVENUE

| | | | | | | |
|------|------|------|------|------|------|---------|
| 2.6% | 1.3% | 0.6% | 3.2% | 0.6% | 3.3% | - 0.97% |
|------|------|------|------|------|------|---------|

STABLZ RATE VAR AS PERCENT OF TOTAL REVENUE

| | | | | | | |
|------|--------|-------|------|-------|------|--------|
| 0.1% | -0.15% | -0.4% | 4.7% | -0.6% | 2.3% | - 0.8% |
|------|--------|-------|------|-------|------|--------|

CIVILIAN PERSONNEL MILITARY PERSONNEL

| | | | | | | |
|-------|-------|-------|-----|-------|-------|-------|
| 2,300 | 5,030 | 2,640 | 670 | 4,160 | 3,082 | 2,629 |
| 250 | 102 | 77 | 94 | 430 | 130 | 329 |

APPENDIX B (Continued)

NIF RDT&E ACTIVITIES FINANCIAL INFORMATION
FOR FISCAL YEAR 1977 (DOLLARS IN THOUSANDS)

| | NRL | NATC | NAPTC | NAEC | PMTC | NCEL | COMPOSITE |
|---------------------------|---------|--------|--------|--------|---------|--------|-----------|
| TOTAL REVENUE | 177,231 | 90,918 | 23,793 | 89,629 | 160,751 | 16,439 | 1,717,299 |
| COST OF SERVICES PROVIDED | 181,310 | 90,507 | 23,509 | 89,572 | 159,682 | 16,339 | 1,704,506 |
| NET OPERATING RESULTS | -4,079 | 411 | 284 | 56 | 1,070 | 100 | 12,793 |

ANALYSIS OF NET OPERATING RESULTS

| | | | | | | | |
|------------------------------|--------|-----|-----|-------|-------|-----|--------|
| PROD EXP PROFIT/LOSS(-) | -377 | 0 | 0 | -547 | 598 | -13 | -1,473 |
| GENL EXP PROFIT/LOSS(-) | -5,040 | 0 | 0 | 1,247 | 534 | 170 | 10,867 |
| FIXED PRICE PROFIT/LOSS(-) | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| OTHER VAR PROFIT/LOSS(-) | 0 | -14 | 0 | -306 | 183 | 0 | -404 |
| STABLZ RATE VAR PROF/LOSS(-) | 600 | 404 | 141 | -337 | -245 | -57 | 2,987 |
| DIRECT ADJUSTMENTS | 738 | 21 | 143 | 0 | 0 | 0 | 830 |
| NET OPERATING RESULTS | -4,079 | 411 | 284 | 56 | 1,070 | 100 | 12,793 |

PROFIT/LOSS AS PERCENT OF REVENUE

| | | | | | | | |
|--|-------|------|------|------|------|------|------|
| | -2.3% | 0.5% | 1.2% | 0.1% | 0.7% | 0.6% | 0.7% |
|--|-------|------|------|------|------|------|------|

STABLZ RATE VAR AS PERCENT OF TOTAL REVENUE

| | | | | | | | |
|--|------|------|------|-------|-------|-------|------|
| | 0.3% | 0.4% | 0.6% | -0.4% | -0.2% | -0.3% | 0.2% |
|--|------|------|------|-------|-------|-------|------|

CIVILIAN PERSONNEL
MILITARY PERSONNEL

| | | | | | | | |
|--------------------|-------|-------|-----|-------|-------|-----|--------|
| CIVILIAN PERSONNEL | 3,603 | 2,133 | 611 | 1,948 | 3,866 | 314 | 32,986 |
| MILITARY PERSONNEL | 136 | 1,316 | 8 | 253 | 960 | 13 | 4,098 |

APPENDIX C

QUESTIONNAIRE FOR COMMANDER AND TECHNICAL DIRECTOR ASSESSMENTS

PURPOSE: The purpose of this questionnaire is to obtain your opinions as to how rate stabilization has effected you and your subordinate managers.

INSTRUCTIONS: Please complete the questionnaire and return it in the attached envelope as soon as possible, but no later than 1 March 1978. Either a pen or pencil may be used to complete the questionnaire. The questions may be answered by simply placing an "X" in the appropriate box. You may desire to add comments; therefore, the last page is provided for any additional comments.

Beside each of the statements listed below, please indicate whether you strongly agree (SA), agree (A), disagree (D), strongly disagree (SD), or don't know (DK).

SA A D SD DK

1. The 18 month lead time for developing stabilized rates will lead NIF RDT&E activities to use more scientific and refined planning and budgeting methods in order to develop rates that are as accurate as possible.

0 5 7 9 2
[] [] [] [] []

2. The stabilized rate(s) for a cost center at a NIF R&D activity fixes only one of two important variables in R&D planning. That is, it fixes the price or rate charged per unit of effort, whereas the predominant variables, scope of work and manning levels, are still left to educated estimates.

13 8 0 1 0
[] [] [] [] []

3. Gains and losses of NIF R&D activities are compensated for in ensuing fiscal years by a uniform adjustment of the rates of all the activities in the activity group. This uniform adjustment removes incentives for NIF R&D activity managers (Commanders, Technical Directors, Cost Center Managers) to attempt to control costs or break-even since other activities will help make up a loss or will share in a gain.

11 7 3 0 1
[] [] [] [] []

| | <u>SA</u> | <u>A</u> | <u>D</u> | <u>SD</u> | <u>DK</u> |
|--|------------------|-------------------|-------------------|-----------------|-----------------|
| 4. Each NIF R&D activity ought to be fully responsible for its gains and losses, that is, it should fully compensate for its own gains and losses by adjusting its own rates. | <u>19</u> [] | <u>1.5</u> [] | <u>1.5</u> [] | <u>0</u> [] | <u>0</u> [] |
| 5. NIF R&D activity Commanders ought to be allowed the fiscal flexibility to make the best possible decisions to accomplish the assigned missions of the activities. | <u>18</u> [] | <u>1</u> [] | <u>0</u> [] | <u>0</u> [] | <u>0</u> [] |
| 6. Stabilized rates take away one area of flexibility that NIF R&D activities should retain. This is the flexibility to periodically change overhead rates during a fiscal year in order to minimize gains or losses in the NIF Corpus. | <u>13</u> [] | <u>9</u> [] | <u>0</u> [] | <u>0</u> [] | <u>0</u> [] |
| 7. Gains and losses at NIF R&D activities, whether caused by stabilized rates or by uncontrollable external factors, are viewed by higher levels of command as a negative reflection on the Commanders and/or Comptrollers of the activities. | <u>3</u> [] | <u>14</u> [] | <u>2</u> [] | <u>0</u> [] | <u>3</u> [] |
| 8. Increasingly conservative behavior by Commanders and other managers of NIF R&D activities will be one result of rate stabilization. For example, the Commander may be scrutinized and judged if his rates generate variances; therefore, he will be biased in favor of courses of action which minimize the probability of large variances. | <u>5</u> [] | <u>9</u> [] | <u>6</u> [] | <u>0</u> [] | <u>2</u> [] |
| 9. The setting of rates at a NIF R&D activity can be affected by factors beyond the control of the managers of that activity, for example, by a gain or loss experienced by the activity group as a whole. This has a psychological impact on the activity's Commander and Comptroller. | <u>6</u> [] | <u>12</u> [] | <u>2</u> [] | <u>0</u> [] | <u>2</u> [] |

SA A D SD DK

10. Stabilized rates, one set, may become self-fulfilling objectives, that is, management may transact its business with one eye on how the rates are working out. ☐ 4 ☐ 14 ☐ 3 ☐ 0 ☐ 1
11. This preoccupation with breaking even may detract from the pursuit of the basic mission and goals of the activity. ☐ 2 ☐ 16 ☐ 4 ☐ 1 ☐ 0
12. The requirement to explain variances, coupled with the fact that higher level command adjusts for gains and losses, provides incentive for improved planning and cost control at the activity level in order to minimize variances. ☐ 0 ☐ 2 ☐ 13 ☐ 4 ☐ 3
13. Higher level command approval of, and adjustment of, the stabilized rates determined by the NIF R&D activity is another manifestation of the trend to centralize management control. ☐ 8 ☐ 13 ☐ 0 ☐ 0 ☐ 1
14. Centralization of management control is desirable in this case. ☐ 0 ☐ 0 ☐ 13 ☐ 8 ☐ 1
15. After over a year's experience with rate stabilization at NIF R&D activities, your opinion is that rate stabilization:
- a. Should be retained as is. ☐ 1
 - b. Should be retained but modified. ☐ 2
(If so, please specify on page 4.)
 - c. Should be abandoned. ☐ 16
 - d. Undecided whether it should be retained. ☐ 2
 - e. Other (please specify on page 4). ☐ 1
16. Please enter the name of your activity: _____

APPENDIX D

QUESTIONNAIRE FOR COMPTROLLER DEPARTMENT ASSESSMENTS

GENERAL INSTRUCTIONS: Please complete the questionnaire and return it in the attached envelope as soon as possible. Either a pen or pencil may be used to complete the questionnaire. Most of the questions may be answered by simply placing an "X" in the appropriate box; other questions ask for written answers. You are encouraged to write additional comments whenever you wish to do so. The last page is provided for additional comments. Please ignore the numbers beside the questions and answers; they are for machine tabulation only.

SPECIFIC INSTRUCTIONS: Beside each of the statements listed below, please indicate whether you strongly agree (SA), agree (A), disagree (D), strongly disagree (SD), or don't know (DK).

| | SA 1 | A 2 | D 3 | SD 4 | DK 5 |
|--|----------|------------|------------|----------|----------|
| 1. One impact of rate stabilization upon NIF R&D activities is modification of the planning and budgeting process necessitated by an increase in the planning lead time, i.e., planning taking place up to 18 months before the budget year. | 5 [] | 5 [] | 3 [] | 0 [] | 0 [] |
| 2. One impact of the longer lead time, coupled with stabilized rates, is an increase in the NIF R&D activity's vulnerability to upheavals in the economy, for example, to steep increases in fuel and utility prices. | 5 [] | 5 [] | 3 [] | 0 [] | 0 [] |
| 3. The longer lead time will lead NIF R&D activities to do more genuine planning to develop rates as accurately as possible, i.e., to use more scientific or refined planning and budgeting methods | 0 [] | 5 [] | 4 [] | 3 [] | 1 [] |
| 4. The use of inflation factors provided by the Office of the Secretary of Defense in budget guidance results in accurate projections of what costs will be in the budget year. | 0 [] | 2.5 [] | 4.5 [] | 4 [] | 0 [] |

SA A D SD DK
1 2 3 4 5

5. The stabilized rates at a NIF R&D activity fix only one of the important variables in R&D planning. That is, they fix the price or rate charged per unit of effort, whereas the predominant variables, scope of work and manning levels, are still left to educated estimates.

4 8 1 0 0
[] [] [] [] []

6. Real benefits to NIF R&D activities can be obtained by use of stabilized rates rather than actual costs in planning, budgeting, and budget execution.

0 3 5 5 0
[] [] [] [] []

7. Stabilized rates take away one area of flexibility that local activities should retain. This is the flexibility to periodically change cost center and general overhead rates during a fiscal year in order to minimize gains and losses.

6 6 1 0 0
[] [] [] [] []

8. The change to stabilized rates is another manifestation of the trend to standardize and to centralize management control.

9 4 0 0 0
[] [] [] [] []

9. Gains and losses of NIF R&D activities are compensated for in the ensuing fiscal years by a uniform payback among the activities in the activity group. For example, only one of the activities may make a significant gain in Fiscal Year 1978, but all the activities' rates will be adjusted by the activity group manager to compensate uniformly. Under this concept a gain or loss generated by an activity will not be returned to or compensated for by the customers of that activity. The customers of all the activities in the group will compensate. This is desirable.

0 5 15 11 0
[] [] [] [] []

10. The uniform payback removes incentives for local activity Commanders and Comptrollers to attempt to control costs and to break even since other activities will help make up a loss or other activities will share in a gain.

5 6 3 0 0
[] [] [] [] []

| | | | | |
|----------|----------|----------|----------|----------|
| SA | A | D | SD | DK |
| <u>1</u> | <u>2</u> | <u>3</u> | <u>4</u> | <u>5</u> |

11. Each NIF R&D activity ought to be fully responsible for it's gains and losses, that is, it should fully compensate for its own gains and losses by adjusting its own rates.

| | | | | |
|------|------|-----|-----|-----|
| [10] | [25] | [5] | [0] | [0] |
|------|------|-----|-----|-----|

12. Since the stabilized rates are estimated as long as 18 months before the budget year, they:

a. Can be accurate if estimated carefully.

| | | | | |
|-----|-----|-----|-----|-----|
| [0] | [3] | [6] | [3] | [1] |
|-----|-----|-----|-----|-----|

b. Are of questionable accuracy.

| | | | | |
|-----|-----|-----|-----|-----|
| [4] | [7] | [2] | [0] | [0] |
|-----|-----|-----|-----|-----|

c. Will guarantee operating losses, given the conservative inflation factors provided in the budget guidance received from the Office of the Secretary of Defense, coupled with unanticipated changes in the economy and fixed rates.

| | | | | |
|-----|-----|-----|-----|-----|
| [2] | [6] | [4] | [0] | [1] |
|-----|-----|-----|-----|-----|

13. Rate stabilization aids the NIF R&D activity during the budget execution period in the following ways:

a. It aids in controlling cost center costs, since proposed cost center expansions may not be allowed on the basis that they have not been planned during stabilized rate determinations.

| | | | | |
|-----|------|------|-----|-----|
| [0] | [35] | [55] | [4] | [0] |
|-----|------|------|-----|-----|

b. Stabilized rates provide a useful tool for variance analysis and/or provide useful information for cost control during the fiscal year.

| | | | | |
|-----|------|------|-----|-----|
| [0] | [55] | [35] | [1] | [0] |
|-----|------|------|-----|-----|

c. Stabilized rates are of no or of little aid during budget execution.

| | | | | |
|-----|------|------|-----|-----|
| [3] | [45] | [55] | [0] | [0] |
|-----|------|------|-----|-----|

d. Other (please specify on page 6).

SA A D SD DK
1 2 3 4 5

14. Suppose that the NIF R&D activities as a group were to show a cumulative operating loss in Fiscal Year 1978 of \$10 million and a gain in Fiscal Year 1979 of \$12 million. The fluctuations are caused by a combination of inflation that was not anticipated, errors in setting rates, changes in workload, etc. Your reactions to this situation are:

a. The fluctuations are "unfair and unfortunate" since Fiscal Year 1979 customers "will pay" for costs actually incurred by the activities for Fiscal Year 1978 customers.

6 4 3 0 0
[] [] [] [] []

b. Rate stabilization will increase the occurrence of such fluctuations.

5 3 0 0 0
[] [] [] [] []

c. Rate stabilization will decrease the occurrence of such fluctuations.

0 0 7 6 0
[] [] [] [] []

d. You have to be able to justify why a gain or loss has occurred, but the mere fact of a significant gain or loss is not of concern.

0 15 65 5 0
[] [] [] [] []

e. Other (please specify on page 6).

15. Gains or losses at NIF R&D activities, whether caused by stabilized rates or by uncontrollable external factors, will be viewed as a negative reflection on the Commanders and Comptrollers of the activities.

5 45 65 0 3
[] [] [] [] []

16. The requirement to explain variances, coupled with the fact that higher level command adjusts for gains and losses, provides an incentive for improved planning and cost control within a NIF activity.

0 3 6 4 0
[] [] [] [] []

17. Increasingly conservative behavior by management of NIF R&D activities will be one result of rate stabilization; that is, managers will be biased in favor of courses of action which minimize the probability of large variances.

0 7 4 3 0
[] [] [] [] []

| | | | | |
|----------|----------|----------|----------|----------|
| SA | A | D | SD | DK |
| <u>1</u> | <u>2</u> | <u>3</u> | <u>4</u> | <u>5</u> |

18. The setting of rates at a particular activity can be affected by factors that have nothing to do with the activity itself; for example, a gain or loss experienced by the activity group as a whole. This has a psychological impact on the activity Commander and Comptroller.

| | | | | |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| 4 | 3 | 1 | 0 | 0 |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

19. After over a year's experience with rate stabilization at NIF R&D activities, your opinion is that rate stabilization:

- | | |
|---|----------------------------|
| a. Should be abandoned. | <input type="checkbox"/> 9 |
| b. Should be retained but modified. (If so, please specify modifications on page 6.) | <input type="checkbox"/> 2 |
| c. Should be retained as is | <input type="checkbox"/> 1 |
| d. Other (please specify on page 6). | <input type="checkbox"/> 1 |

20. How much of your time is now spent on rate stabilization that was previously spent on other activities?

- | | |
|------------------|----------------------------|
| a. Less than 10% | <input type="checkbox"/> 6 |
| b. 10% to 25% | <input type="checkbox"/> 4 |
| c. 26% to 50% | <input type="checkbox"/> 1 |
| d. Over 50% | <input type="checkbox"/> 0 |

OTHER COMMENTS OR INFORMATION: Use the remainder of this page and page 6 to make any comments or suggestions. If your comments relate to a specific item in this questionnaire, please show the question number. You are encouraged to discuss any subject which you feel would be of help in conducting this review. Also feel free to attach any materials which you feel would be of help.

THANK YOU FOR YOUR TIME.

Please enter the name of your activity: _____

QUESTIONNAIRE FOR ASSESSMENT OF NIF R&D ACTIVITY IMPLEMENTATION OF RATE STABILIZATION

PURPOSE: The purpose of this questionnaire is to obtain information on how your activity implemented rate stabilization. Only one person at your activity needs to fill out this questionnaire.

GENERAL INSTRUCTIONS: The Budget Officer, Accounting Officer, or other appropriate analyst or accountant in the Comptroller Department is requested to complete this questionnaire and return it in the attached envelope as soon as possible. Most of the questions may be answered by simply placing an "X" in the appropriate box or by providing short answers. You are encouraged to write in additional comments whenever you wish to do so. The last page is provided for additional comments. Please ignore the numbers beside the questions and answers; they are for machine tabulation only.

SPECIFIC INSTRUCTIONS: Beside each of the statements and questions listed below, indicate yes, no or don't know (DK).

| | | |
|----------|----------|----------|
| YES | NO | DK |
| <u>1</u> | <u>2</u> | <u>3</u> |

1. How are stabilized rates and rate variances accounted for in your activity's accounting system?

a. In the cost accounting system, essentially as a composite overhead rate which is applied in the labor distribution system.

| | | |
|-----|-----|-----|
| 9 | 4 | 0 |
| [] | [] | [] |

b. In the billing system which determines the number of hours worked on a customer order and multiplies them by a billing rate.

| | | |
|-----|-----|-----|
| 6 | 7 | 0 |
| [] | [] | [] |

c. Other (please specify on page 3)

| | | |
|-----|-----|-----|
| [] | [] | [] |
|-----|-----|-----|

2. At your activity, stabilized rates and rate variances are used as follows:

a. For cost control and analysis at the individual customer order level.

| | | |
|-----|-----|-----|
| 6 | 7 | 0 |
| [] | [] | [] |

b. For cost control and analysis at the cost center level.

| | | |
|-----|-----|-----|
| 9 | 3 | 0 |
| [] | [] | [] |

c. For cost control and analysis at the overall activity level.

| | | |
|-----|-----|-----|
| 9 | 4 | 0 |
| [] | [] | [] |

d. Other (please specify on page 3)

| | | |
|-----|-----|-----|
| [] | [] | [] |
|-----|-----|-----|

| YES | NO | DK |
|----------|----------|----------|
| <u>1</u> | <u>2</u> | <u>3</u> |

3. Your activity produces reports showing variances between stabilized rate billings and actual costs:

- | | | | |
|---------------------------------------|--|---------------------------------------|----------------------------|
| a. At the cost center level | <input checked="" type="checkbox"/> 12 | <input type="checkbox"/> 1 | <input type="checkbox"/> 0 |
| b. At the direct customer order level | <input checked="" type="checkbox"/> 11 | <input checked="" type="checkbox"/> 2 | <input type="checkbox"/> 0 |
| c. At the job order number level | <input checked="" type="checkbox"/> 12 | <input type="checkbox"/> 1 | <input type="checkbox"/> 0 |
| d. Other (please specify on page 3) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

4. A considerable additional cost is involved in establishing and operating the rate stabilization system.

| | | |
|---------------------------------------|---------------------------------------|----------------------------|
| <input checked="" type="checkbox"/> 9 | <input checked="" type="checkbox"/> 3 | <input type="checkbox"/> 1 |
|---------------------------------------|---------------------------------------|----------------------------|

5. Are the costs of implementing the rate stabilization system at your activity available?

| | | |
|---------------------------------------|--|----------------------------|
| <input checked="" type="checkbox"/> 2 | <input checked="" type="checkbox"/> 11 | <input type="checkbox"/> 0 |
|---------------------------------------|--|----------------------------|

If yes, what were the total costs of implementation?

\$ _____

6. Are the annual costs of operating rate stabilization available for Fiscal Year 1977?

| | | |
|----------------------------|--|----------------------------|
| <input type="checkbox"/> 1 | <input checked="" type="checkbox"/> 12 | <input type="checkbox"/> 0 |
|----------------------------|--|----------------------------|

If yes, what were the operating costs for Fiscal Year 1977?

\$ _____

7. Was anything unique about your activity that made implementation of rate stabilization difficult? (If yes, please specify on page 3.)

| | | |
|---------------------------------------|--|----------------------------|
| <input checked="" type="checkbox"/> 3 | <input checked="" type="checkbox"/> 10 | <input type="checkbox"/> 0 |
|---------------------------------------|--|----------------------------|

8. Even though stabilized billing rates are fixed, does your activity adjust production and general overhead rates during the fiscal year to minimize over- under-applied overhead?

| | | |
|---------------------------------------|---------------------------------------|----------------------------|
| <input checked="" type="checkbox"/> 4 | <input checked="" type="checkbox"/> 9 | <input type="checkbox"/> 0 |
|---------------------------------------|---------------------------------------|----------------------------|

9. Has implementation of stabilized rates changed how your activity prepares budgets? (If yes, please explain on page 3.)

| | | |
|---------------------------------------|---------------------------------------|----------------------------|
| <input checked="" type="checkbox"/> 9 | <input checked="" type="checkbox"/> 4 | <input type="checkbox"/> 0 |
|---------------------------------------|---------------------------------------|----------------------------|

ASSESSMENT OF IMPLEMENTATION OF RATE STABILIZATION

Page 3

| YES | NO | DK |
|----------|----------|----------|
| <u>1</u> | <u>2</u> | <u>3</u> |

10. Do you expect to improve your rate determination techniques with experience?

| | | |
|----------|----------|----------|
| <u>9</u> | <u>4</u> | <u>0</u> |
| [] | [] | [] |

11. How many direct customer orders did your activity have during Fiscal Year 1977?

70 to 4,300 Average: 1,600

IF POSSIBLE, PLEASE ATTACH A DESCRIPTION OF YOUR RATE STABILIZATION ACCOUNTING SYSTEM.

OTHER COMMENTS OR INFORMATION: Use this page to make any comments or suggestions. If your comments relate to a specific item in this questionnaire, please show the question number. Feel free to attach any materials which you feel would be of help.

THANK YOU FOR YOUR TIME.

Please enter the name of your activity: _____.

APPENDIX E

QUESTIONNAIRE FOR COST CENTER MANAGER AND PROJECT MANAGER ASSESSMENTS

Page 1

GENERAL INSTRUCTIONS: Please complete the questionnaire as soon as possible and return it in the attached envelope. Either a pen or pencil may be used to complete the questionnaire. Most of the questions may be answered by simply placing an "X" in the appropriate box; other questions ask for written answers. You are encouraged to write additional comments whenever you wish to do so. The last page is provided for additional comments. Please ignore the numbers beside the questions and answers; they are for machine tabulation only.

SPECIFIC INSTRUCTIONS: Beside each of the statements listed below, please indicate whether you strongly agree (SA), agree (A), disagree (D), strongly disagree (SD), or don't know (DK).

| SA | A | D | SD | DK |
|----|---|---|----|----|
| 1 | 2 | 3 | 4 | 5 |

1. The stabilized rates at a NIF R&D activity fix only one of the important variables in R&D planning. That is, they fix the price or rate charged per unit of effort, whereas the predominant variables, scope of work and manning levels, are still left to educated estimates.

| | | | | |
|----|----|---|---|---|
| 12 | 32 | 0 | 3 | 0 |
|----|----|---|---|---|

2. Real benefits to NIF R&D activities can be obtained by use of stabilized rates rather than actual costs in planning projects, budgeting, and budget execution (cost control and analysis).

| | | | | |
|---|---|----|----|---|
| 1 | 8 | 20 | 16 | 3 |
|---|---|----|----|---|

3. Stabilized rates take away one area of flexibility that local activities should retain. This is the flexibility to periodically change cost center and general overhead rates during a fiscal year in order to minimize gains and losses.

| | | | | |
|----|----|---|---|---|
| 23 | 20 | 3 | 1 | 0 |
|----|----|---|---|---|

4. Whatever arguments are used to support changing to stabilized rates, the new policy is another manifestation of the trend to standardize and to centralize control.

| | | | | |
|----|----|---|---|---|
| 17 | 16 | 7 | 1 | 6 |
|----|----|---|---|---|

| | | | | |
|----------|----------|----------|----------|----------|
| SA | A | D | SD | DK |
| <u>1</u> | <u>2</u> | <u>3</u> | <u>4</u> | <u>5</u> |

5. Stabilized rates provide information to you as cost center managers and project managers that is useful in managing your cost center and/or project. (If so, please specify what information on page 3.)

| | | | | |
|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|
| <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|

6. The setting of rates at a particular activity can be affected by factors that have nothing to do with the activity itself; for example, a gain or loss experienced by the activity group as a whole. This has a psychological impact on you as managers.

| | | | | |
|-----------------------------|-----------------------------|----------------------------|----------------------------|----------------------------|
| <input type="checkbox"/> 13 | <input type="checkbox"/> 24 | <input type="checkbox"/> 3 | <input type="checkbox"/> 0 | <input type="checkbox"/> 5 |
|-----------------------------|-----------------------------|----------------------------|----------------------------|----------------------------|

7. Have program managers in the systems commands (customers or sponsors) brought pressure upon you to assign the more highly paid personnel to their program (since all personnel cost them the same under stabilized rates)?

- | | |
|--------------------|-----------------------------|
| a. Yes, often. | <input type="checkbox"/> 4 |
| b. Yes, sometimes. | <input type="checkbox"/> 6 |
| c. Rarely. | <input type="checkbox"/> 10 |
| d. Never. | <input type="checkbox"/> 21 |
| e. Don't Know. | <input type="checkbox"/> 5 |

8. What effect has stabilized rates had on your relationships and communications with sponsors or customers?

- | | |
|---|-----------------------------|
| a. Caused problems | <input type="checkbox"/> 15 |
| b. Has had minimal effect. | <input type="checkbox"/> 26 |
| c. Has improved relationships and communications. | <input type="checkbox"/> 3 |
| d. Greatly improved relationships and communications. | <input type="checkbox"/> 0 |
| e. Other (please specify on page 3). | <input type="checkbox"/> 3 |

9. How much of your time is now spent on rate stabilization that was previously spent on other activities?

- | | | |
|------------------|--------------------------|----|
| a. Less than 10% | <input type="checkbox"/> | 44 |
| b. 10% to 25% | <input type="checkbox"/> | 0 |
| c. 26 to 50% | <input type="checkbox"/> | 0 |
| d. Over 50% | <input type="checkbox"/> | 0 |

10. After over a year's experience with rate stabilization at NIF R&D activities, your opinion is that rate stabilization:

- | | | |
|---|--------------------------|----|
| a. Should be abandoned. | <input type="checkbox"/> | 28 |
| b. Should be retained as is. | <input type="checkbox"/> | 8 |
| c. Should be retained but modified. (If so, please specify modifications below.) | <input type="checkbox"/> | 6 |
| d. Other (Please specify below). | <input type="checkbox"/> | 3 |

OTHER COMMENTS OR INFORMATION: Use the remainder of this page and the next page to make any comments or suggestions. If your comments relate to a specific item in this questionnaire, please show the question number. Feel free to discuss any subject which you feel would be of help in conducting this survey. Also feel free to attach any materials you desire.

THANK YOU FOR YOUR TIME.

Please enter the name of your activity: _____

APPENDIX F

QUESTIONNAIRE FOR ASSESSMENT OF THE IMPACT OF RATE STABILIZATION ON CUSTOMERS OF NIF R&D ACTIVITIES

PURPOSE: This questionnaire is part of a thesis project being done by Don Green, a student at the Naval Postgraduate School. Mr. Green's research consists of:

- a. Analysis of how rate stabilization has been implemented at NIF R&D activities;
- b. Assessment of how planning, budgeting, and budget execution at the activities have changed;
- c. Assessment of the impact of rate stabilization on managers at the activities; and
- d. Assessment of the impact of rate stabilization on customers of the activities.

The purpose of this questionnaire is to obtain your assessment, as project managers of customers of NIF R&D activities, of the impact that rate stabilization has had on you.

INSTRUCTIONS: Please complete the questionnaire and return it in the attached envelope directly to Mr. Green prior to 1 March 1978. Either a pen or pencil may be used to complete the questionnaire. The questions may be answered by placing an "X" in the appropriate box. You are encouraged to write additional comments whenever you wish to do so. The last page is provided for comments.

Beside each of the statements listed below, please indicate whether you strongly agree (SA), agree (A), disagree (D), strongly disagree (SD), or don't know (DK).

| | <u>SA</u> | <u>A</u> | <u>D</u> | <u>SD</u> | <u>DK</u> |
|--|-----------|-----------|-----------|-----------|-----------|
| 1. Stabilized rates are a useful planning aid for you, the customers of NIF R&D activities. Knowing the stabilized rates of an activity enables you to know in advance how many hours of effort your dollars will buy. | 3 [] | 32 [] | 10 [] | 2 [] | 5 [] |
| 2. Even though you, the customer, know how many hours of effort you can buy, you do not know how many hours of effort will be required to achieve a solution to the research problem. | 15 [] | 30 [] | 3 [] | 2 [] | 1 [] |
| 3. Questions 1. and 2. point out that stabilized rates address only part of the R&D project planning problem that you have. | 22 [] | 29 [] | 1 [] | 0 [] | 0 [] |

| | <u>SA</u> | <u>A</u> | <u>D</u> | <u>SD</u> | <u>DK</u> |
|--|-----------|------------|-------------|-----------|-----------|
| 4. You, the customer, receive the activity rates early enough to use them in your planning and budgeting process. | 0 [] | 14 [] | 23 [] | 5 [] | 10 [] |
| 5. Stabilized rates of NIF R&D activities are useful when you are developing plans for the outyears, that is, years beyond the budget year. | 1 [] | 24 [] | 16 [] | 3 [] | 7 [] |
| 6. The multiple rates (at least one rate for each cost center at each activity) cause some confusion. You need to know which cost center at which activity will perform the work on your project in order to know what rate you will be charged. | 2 [] | 36 [] | 9 [] | 0 [] | 5 [] |
| 7. Use of the stabilized rates in your budgets is in fact resulting in receipt of additional funding to cover inflation. | 0 [] | 8.5 [] | 23.5 [] | 9 [] | 11 [] |
| 8. Rate stabilization has provided you with more information to use in planning and budgeting. (If so, please specify what information on page 3.) | 0 [] | 7 [] | 33 [] | 3 [] | 8 [] |
| 9. What effect has stabilized rates had on your relationships and communications with your contacts at NIF R&D activities? | | | | | |
| a. Facilitated and improved communications. | | | [] | 4 | |
| b. Has had no or minimal effect. | | | [] | 37 | |
| c. Has caused problems. | | | [] | 7 | |
| d. Other (please specify on page 3). | | | [] | 2 | |
| 10. How do you learn what a NIF R&D activity's stabilized rates are? | | | | | |
| a. You receive a letter from the activity giving its rates. | | | [] | 8 | |
| b. You learn an activity's rates through conversation with your contacts at the activity. | | | [] | 28 | |
| c. Other (please specify on page 4). | | | [] | 13 | |

11. After over a year's experience with rate stabilization at NIF R&D activities, your opinion is that rate stabilization:

- a. Should be retained as is. ☐ 6
- b. Should be retained but modified. ☐ 4
(If so, please explain on page 4.)
- c. Should be abandoned. ☐ 6
- d. Undecided whether it should be retained. ☐ 28
- f. Other (please specify on page 4). ☐ 7

OTHER COMMENTS OR INFORMATION: use this page and page 4 for comments or suggestions. If your comments relate to a specific item in this questionnaire, please show the question number. You are encouraged to discuss any subject which you feel would be of help in conducting this review.

THANK YOU FOR YOUR TIME.

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